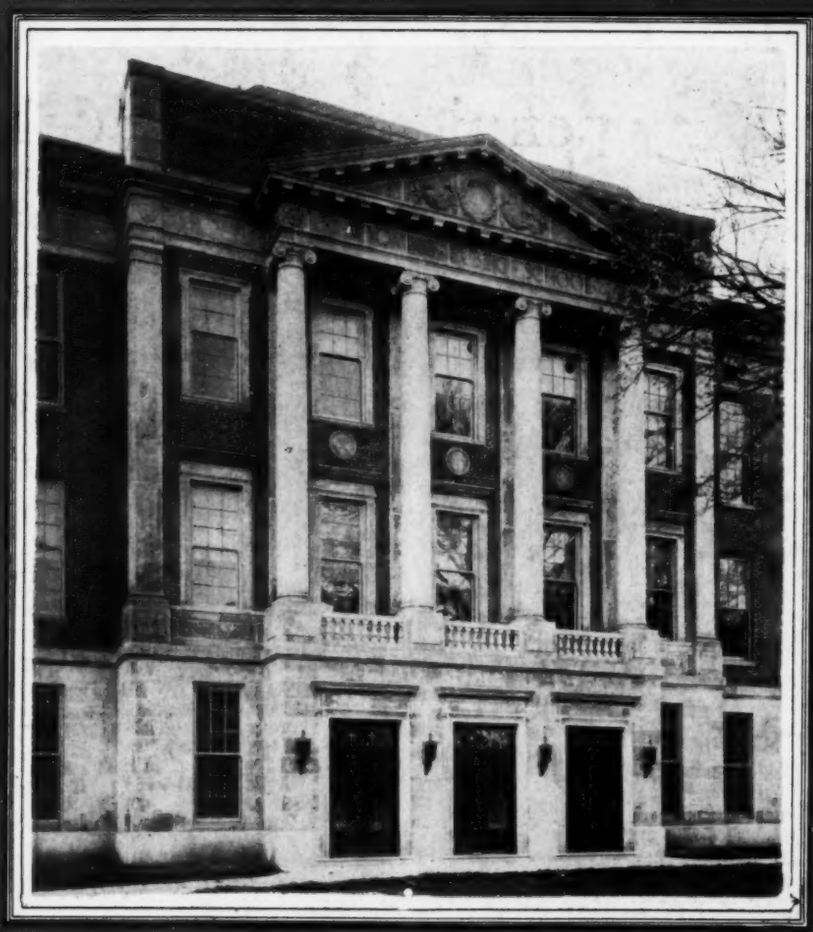
The NATION'S SCHOOLS

DEVOTED TO THE APPLICATION OF RESEARCH TO THE BUILDING, EQUIPMENT AND ADMINISTRATION OF SCHOOLS



VOL. IV.
No. 5

NOVEMBER
1929

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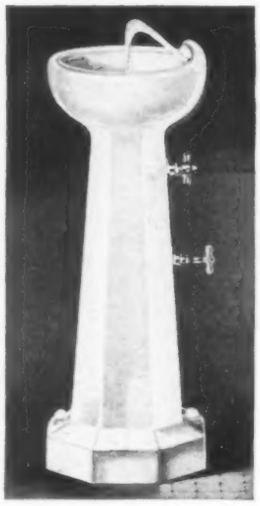
150 Pounds Pressure CRANE VALVES 2500 Pounds Pressure



For every plumbing and piping purpose from boiler room to laboratory, Crane materials have been designed. In its own way, each unit is as advanced in design and utility as these drinking fountains, the CRETA, (below) *C 9084 A, and the* TYRONE, (left) *C 9030 A.*

Hoarding pennies or saving dollars

It is unwise to lavish equipment on one department at the expense of another. But how much economy will plumbing and heating stand? Certainly by purchasing inferior materials efficiency is not only lowered, but the health of children is endangered. Then, too, it is an experiment that is paid for by increased maintenances, costly repairs, and expensive replacements.

Crane engineers have studied this problem. They are prepared to offer a solution to it . . . to lower the cost of plumbing and heating without endangering either efficiency or the building budget. Already they have done it for numberless schools throughout the country. If you drop into the nearest Crane Exhibit Rooms, you will be shown how they can do it for you.

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"DO YOU KNOWS" about Bananas

1. Always serve bananas that have the brown flecks which mean ripeness.

2. The mellow flavor of bananas makes all cereals taste better.

3. Bananas sliced with other fresh or canned fruits add flavor and supply energy for the day.

4. Bananas and milk provide a tempting dish and balanced meal—ideal for growing children and grown-ups.

Ideal as a school lunch ...BANANAS and MILK

SCHOOL cafeterias are learning the value of golden bananas . . . how this delicious fruit, digestible and nourishing, makes, when combined with milk, a practically complete food.

If you are confronted with the vexing problem of simple, nourishing foods to serve your children for lunch or mid-morning recess, here is a valuable suggestion.

Serve bananas with a bottle of milk, or serve one of the other nutritious banana dishes mentioned above—tasty combinations that children like.

High food value

Teachers now recognize that the school luncheon should be a vital part of the health-teaching program.

Even more important than the mere providing of food is the fact that children can be taught to eat foods that are good for them. Medical authorities agree on the banana. Clarence W. Lieb, A.M., M.D., writing in the Woman's Home Companion of June, 1928, says: "The banana, formerly condemned as indigestible, is now recognized as wholesome, easily digestible, high in vitamins, and is even included in the diet of infants."

All-year-round fruit

Bananas are an inexpensive food obtainable in abundance at all seasons. In the winter months especially, bananas are particularly needed in the diet often too low in other fresh fruits and vegetables.

No preparation is necessary to serve bananas. They come sealed in Nature's perfect package. Just peel them. They are clean, sanitary, ready to eat, containing essential vitamins and mineral salts.

Send for this wall card

By free use of posters and pictures children can be taught what foods are best for them. To this end we have prepared the beautiful new wall card, shown above, printed in eight colors; size 12″ x 18″. It is a simple and pleasant reminder of a nutritious diet, impressing upon children the high food value of bananas and milk.

Send for this valuable school aid. FREE!

UNITED FRUIT COMPANY
1 Federal Street, Boston, Mass.

Please send me the Banana and Milk Wall Card.

Name.....

School.....

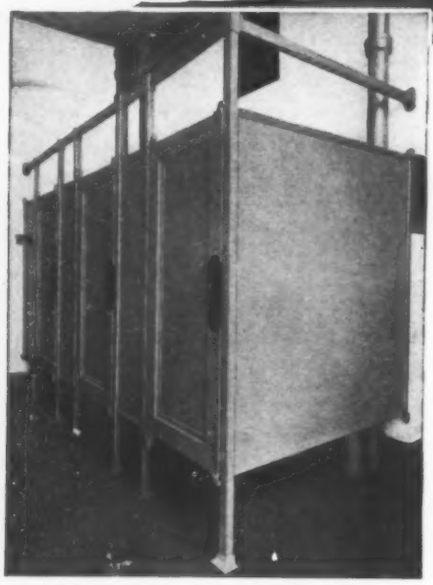
No. of Pupils in my Class.....

Address.....

City .....State.....

NS-11-29

Above, one of the new buildings at Notre Dame University—a Weisteel installation.



Toilet facilities such as pictured above are essential for modern schools. The cost is only one factor. In part, this cost will be repaid by the labor saved in maintenance work, and in far greater part by the improved health of the children in your care.

Modernizing School Toilet Facilities

ARE you confronted with the problem of economically rehabilitating, or increasing the present toilet facilities in your school? Before you start an expensive repair program on the antiquated, worn-out equipment you now have, or try to use inadequate equipment for another school year—investigate WEISTEEL modern, sanitary toilet compartment enclosures.

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WEISTEEL

SHOWER STALLS-COMPARTMENTS-CUBICLES

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THIS MONTH

In the opening article of this issue, Mr. Pittenger offers practical suggestions for school boards who are about to choose a new superintendent.

In the second part of his article on "Instruction Costs in Typical Small High Schools" Mr. Hood proposes a program of studies that will come nearer meeting the needs of pupils in small schools who do not intend to enter college.

The problem of when to tear down old school buildings and when to remodel is discussed by Professor Moehlman on page 43, while the architectural problems met in a reconstruction project are presented in the following article by B. C. Wetzel.

The health officer of the University of Illinois, J. H. Beard, in an article on page 61, points out that a study covering a five-year period reveals that the earlier attention given to illness has resulted in an envious health record at the University of Illinois.

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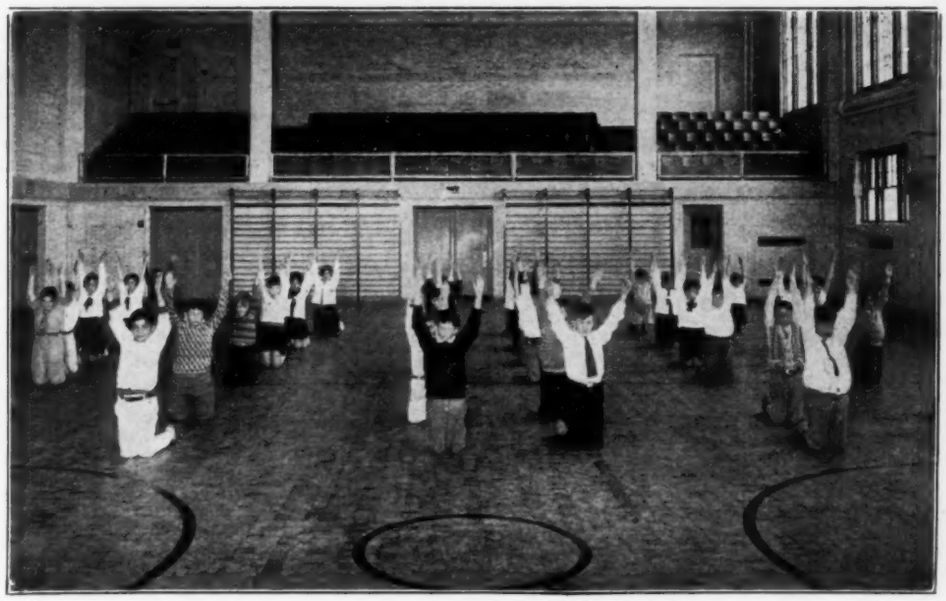

Gymnasium, Vine Street School, Hartford, Conn., floored with BLOXONEND. I. A. Allen, Jr., Inc., Architects. The end-grain fibres form the surface of a Bloxonend floor.

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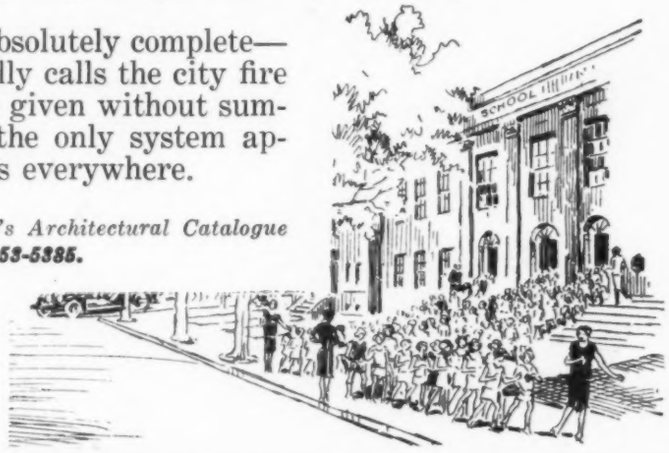
Brochure upon request.



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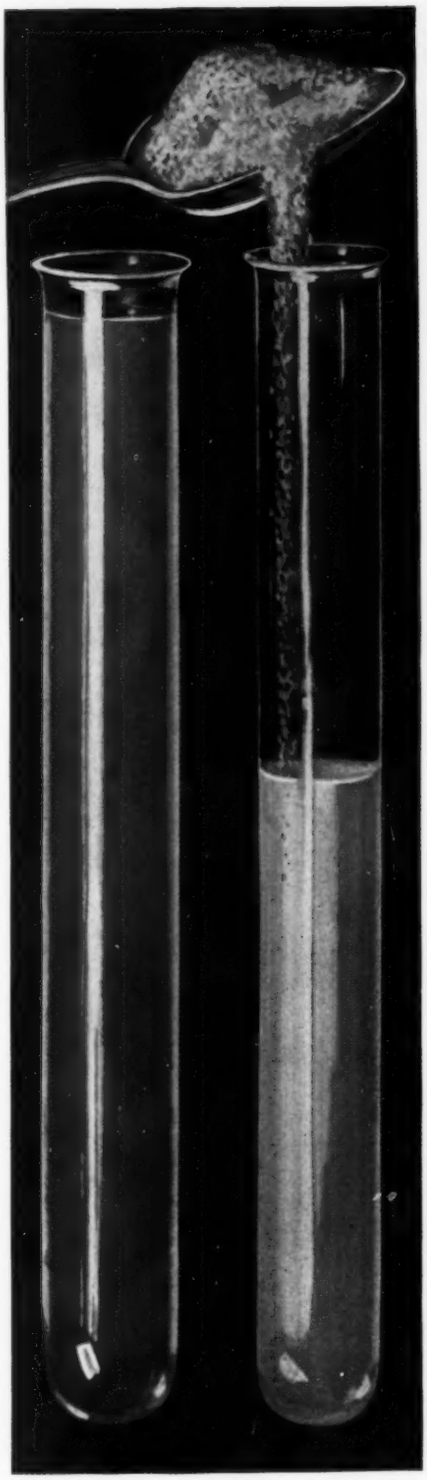

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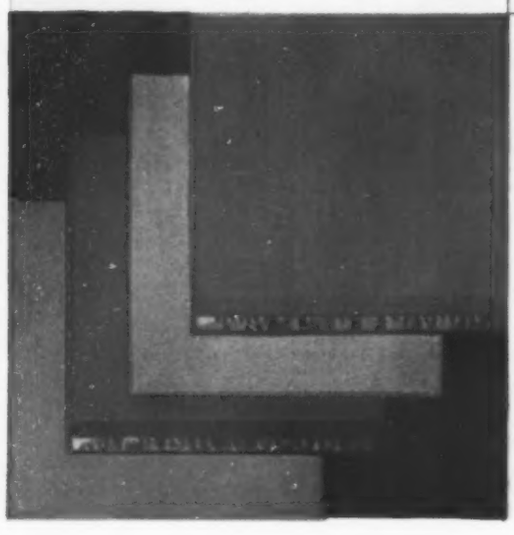

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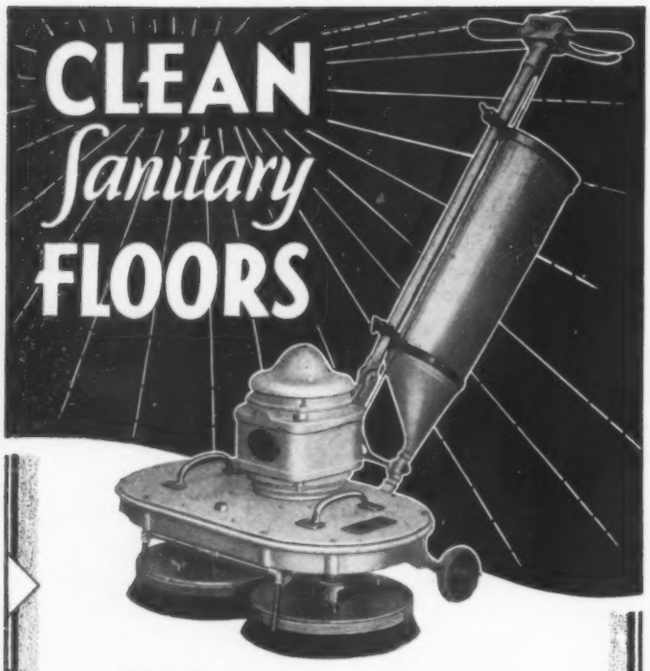

with the

LINCOLN *Twin Disc*

Clean floors are sanitary floors. The LINCOLN Twin Disc will scrub germ laden dirt out of your floors and will polish in a hard protecting surface of wax.

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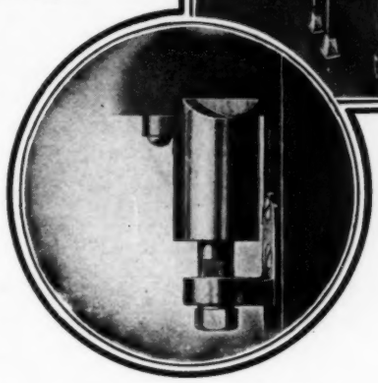

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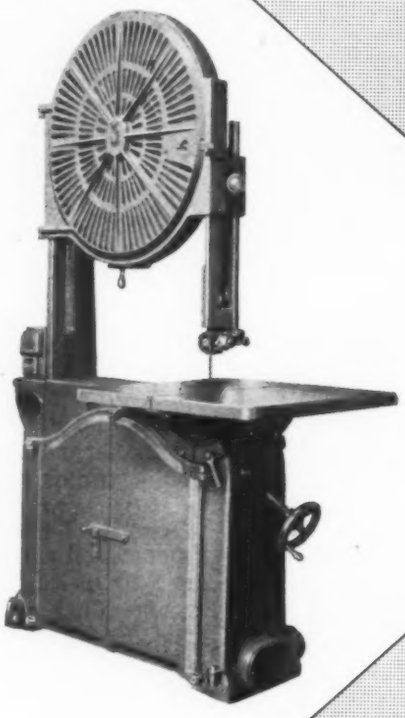

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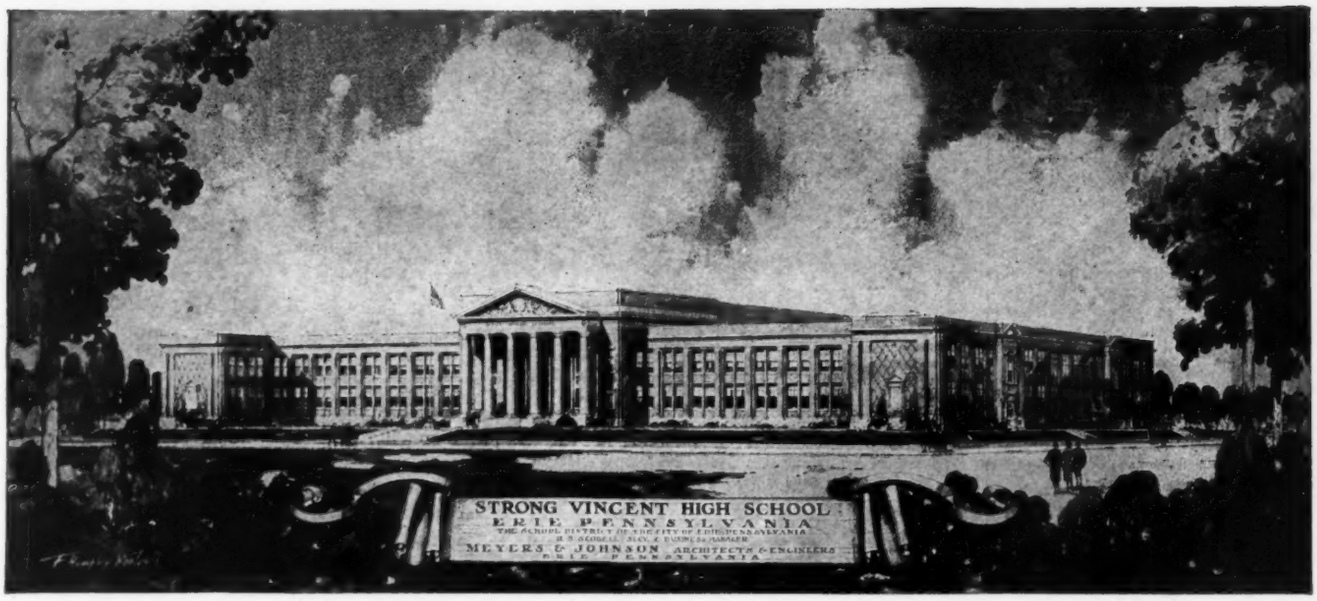

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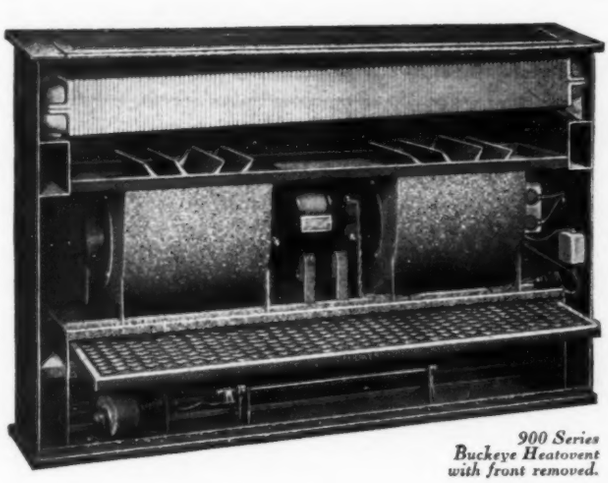

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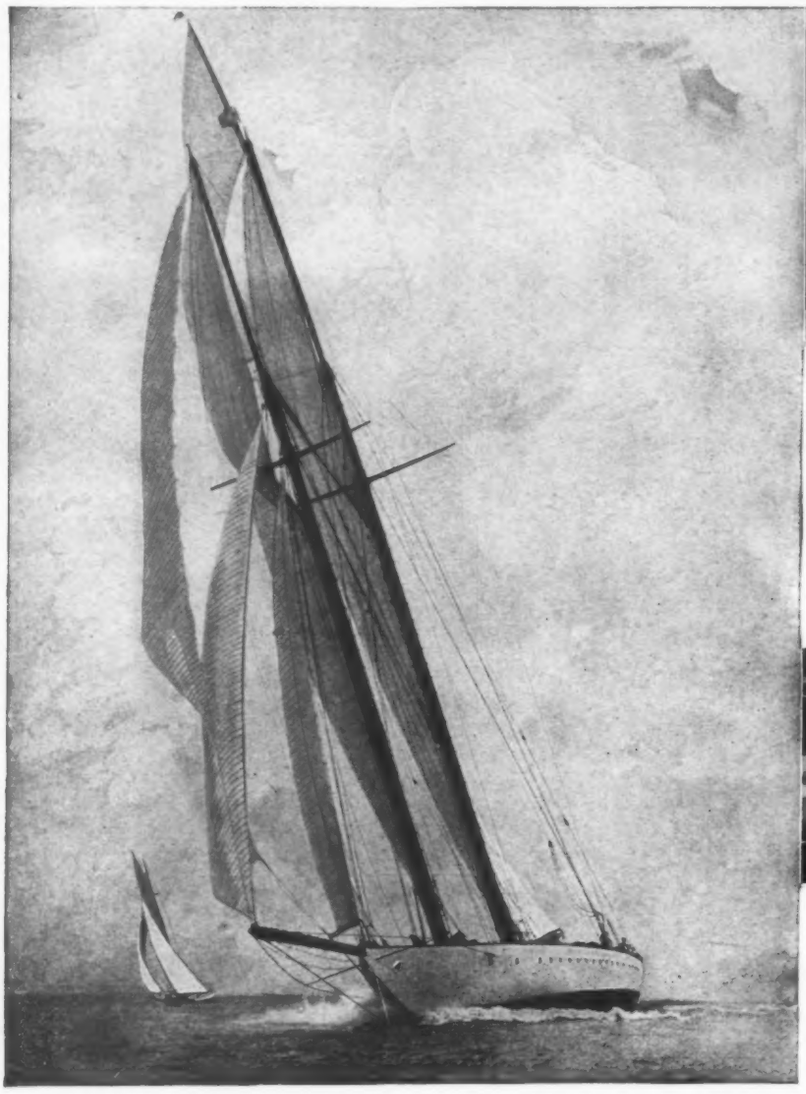
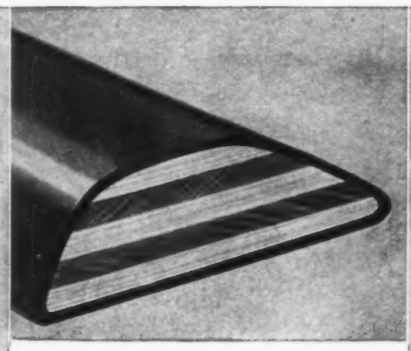
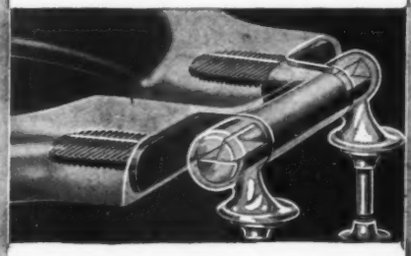
Racing Spars... and Whale-bone-ite





Note the Laminated Construction —a core of alternating-grain layers of hardwood—sealed and bonded to the whole by Whale-bone-ite. It is warp-proof and is guaranteed against warping, crocking and splitting.



The Whale-bone-ite steel hinge is moulded integral with the Seat forming an unbreakable unit. Covered with Whale-bone-ite, the hinge is as handsome as the Seat. It cannot tarnish. It is easy to clean.

Same *laminated* construction... Same shock-defying strength

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It's the secret of Whale-bone-ite strength also, the reason Whale-bone-ite can stand the slam-bang abuse of the careless public—can be guaranteed for the life of the building—can immediately end all replacement expense.

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Whale-bone-ite Seats are found quite generally in the guest bathroom of fine hotels as well as in public institutions where service requirements are severe. Many new apartment houses are equipping all toilets with them.

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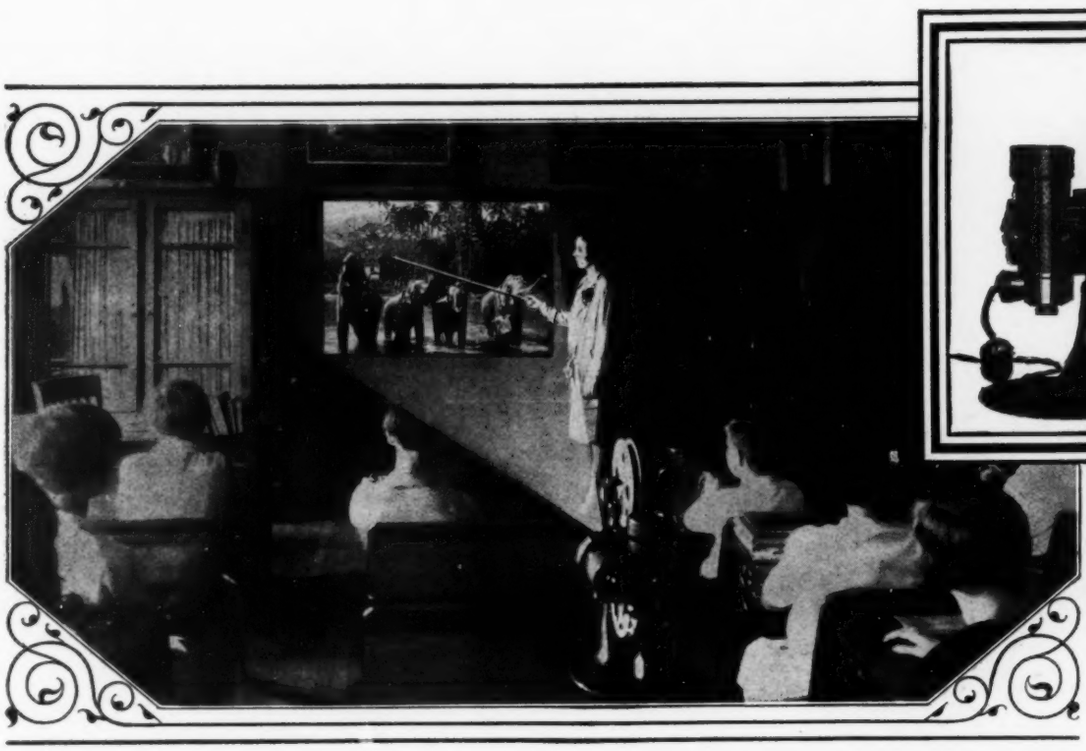

Filmo 57-E Special School Projector 250 watt, 5 amp. lamp, fixed resistance, 45-50 condenser, geared rewind, large type sprockets and safety shutter. With case $205. Other models from $190 up.

The Fool-*Proof* part of visual education
FILMO SCHOOL PROJECTOR

VISUAL education must be wisely planned in all its parts. And not the least of these is projection of the film. A stubborn, complicated, inefficient projector can reduce to an absurdity the most brilliantly conceived ideas. For this reason the successful execution of a visual education program demands such a projector as Filmo 57-E.

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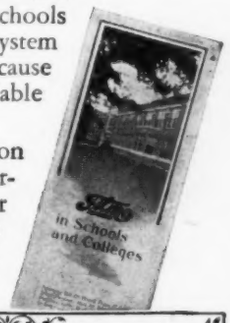

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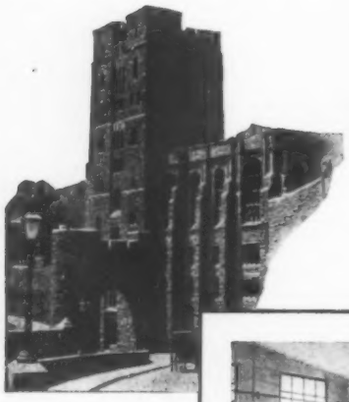
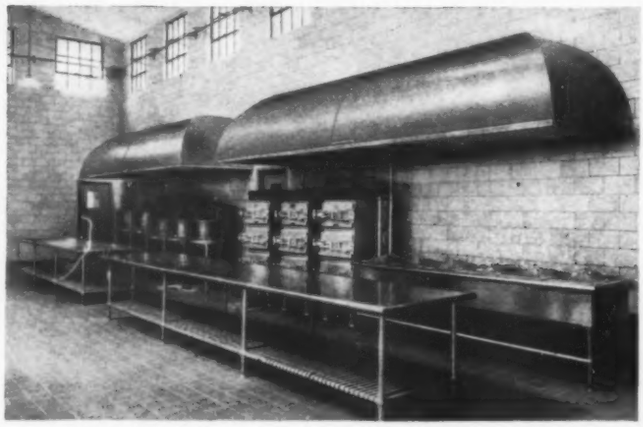
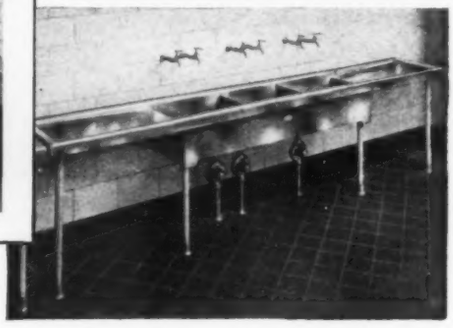


Washington Hall
U. S. *Military Academy*
West Point, N. Y.



Above at left: Administration Building, U. S. Military Academy, West Point, N. Y. At left: View of kitchen, Washington Hall, West Point, showing cooks' tables and cookers manufactured and installed by the John Van Range Co., Division of Albert Pick-Barth Co. Inc. Below: Monel Metal sink in Washington Hall manufactured and installed by the JOHN VAN RANGE CO., DIVISION OF ALBERT PICK-BARTH CO., INC.



At left: Monel Metal dishwashing machine mfd. by FASPRAY CORP. *of Red Bank, N. J. and installed with Monel Metal dish tables in Washington Hall by the John Van Range Co. Cincinnati, Ohio, Division of Albert Pick-Barth Co. Inc.*

. . . . . A *typical Monel Metal installation reflecting the Academy's high standards*

THE immaculate appearance of West Point cadets and the neatness of their surroundings are almost proverbial. It is only natural that the food service department in Washington Hall, West Point's new mess-hall, should conform to the Academy's high standards and represent the ultimate in cleanliness.

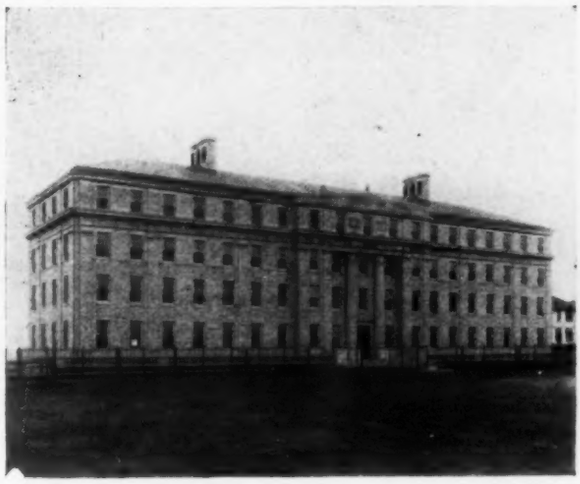
Monel Metal helps to make Washington Hall's kitchen modern, sanitary and attractive. Monel Metal always looks clean and tidy even at the busiest times. It is easy to clean and keep clean—it requires a minimum of maintenance labor.

In schools the country over, Monel Metal has found favor with school cafeteria operators, school board officials and others who know the need for cleanliness with economy. Monel Metal will not rust, it resists corrosion, it has no coating to chip, crack or wear off. It offers a combination of properties available only in Monel Metal. For additional information about Monel Metal food service equipment consult your regular manufacturer or write direct.

Monel Metal is a technically controlled Nickel-Copper alloy of high Nickel content. It is mined, smelted, refined, rolled and marketed solely by The International Nickel Company, Inc. The name "Monel Metal" is a registered trade mark.

MONEL METAL

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N. Y.



Nichols Chemistry Building. Augustus N. Allen, Architect. The Marbleloid Company, 225 West 34th Street, New York City—Distributors.

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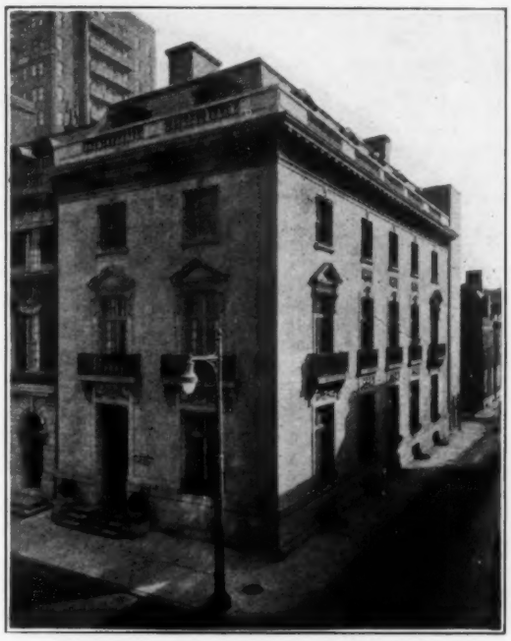

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Architect: Horace Wells Sellers, Philadelphia.
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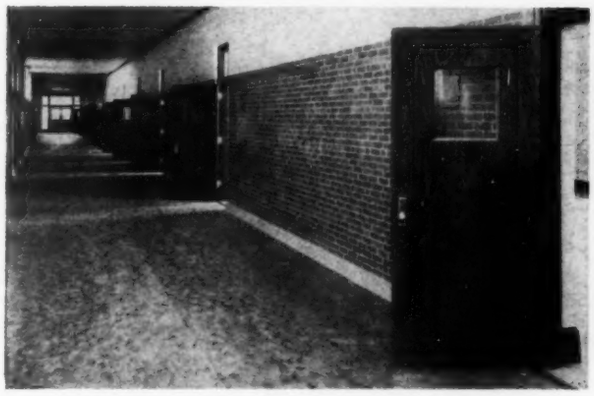
HIGH schools, colleges, grade schools, institutes of music or art, in fact any type of school building finds in Flushwood every valued door feature.

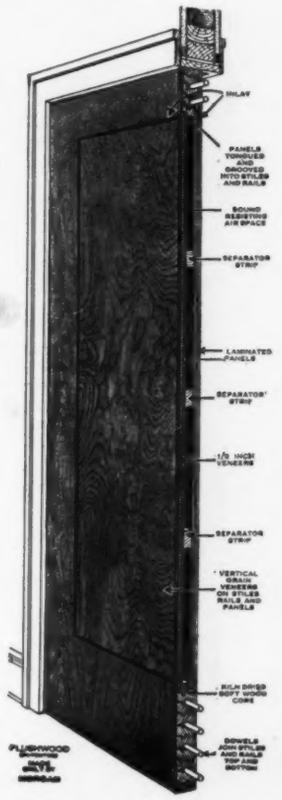
Architects and builders specializing in school building construction know that Flushwood is the ideal school door. Matched point by point with any other its superiority is quickly apparent, and in actual service this difference is even more marked.



Interior View of Sessions St. Jr. High School, Providence, R. I. Flushwood Doors Used Throughout

Flushwood has unusual beauty because of its contrasting wood grains in stiles and rails and panels, and the harmonizing inlay.

It is sound-resistant, a feature proven by scientific laboratory tests at the famous Riverbank Laboratories, Geneva. It is sturdily constructed, an assurance against warping or twisting.



It is light in weight because of its modern construction, which eliminates the great bulk common to the ordinary flush door.

It is low in cost, for mass production due to its popularity keeps costs down.

Here, indeed, is a door worthy of careful consideration for any school building. Complete information gladly furnished on request.

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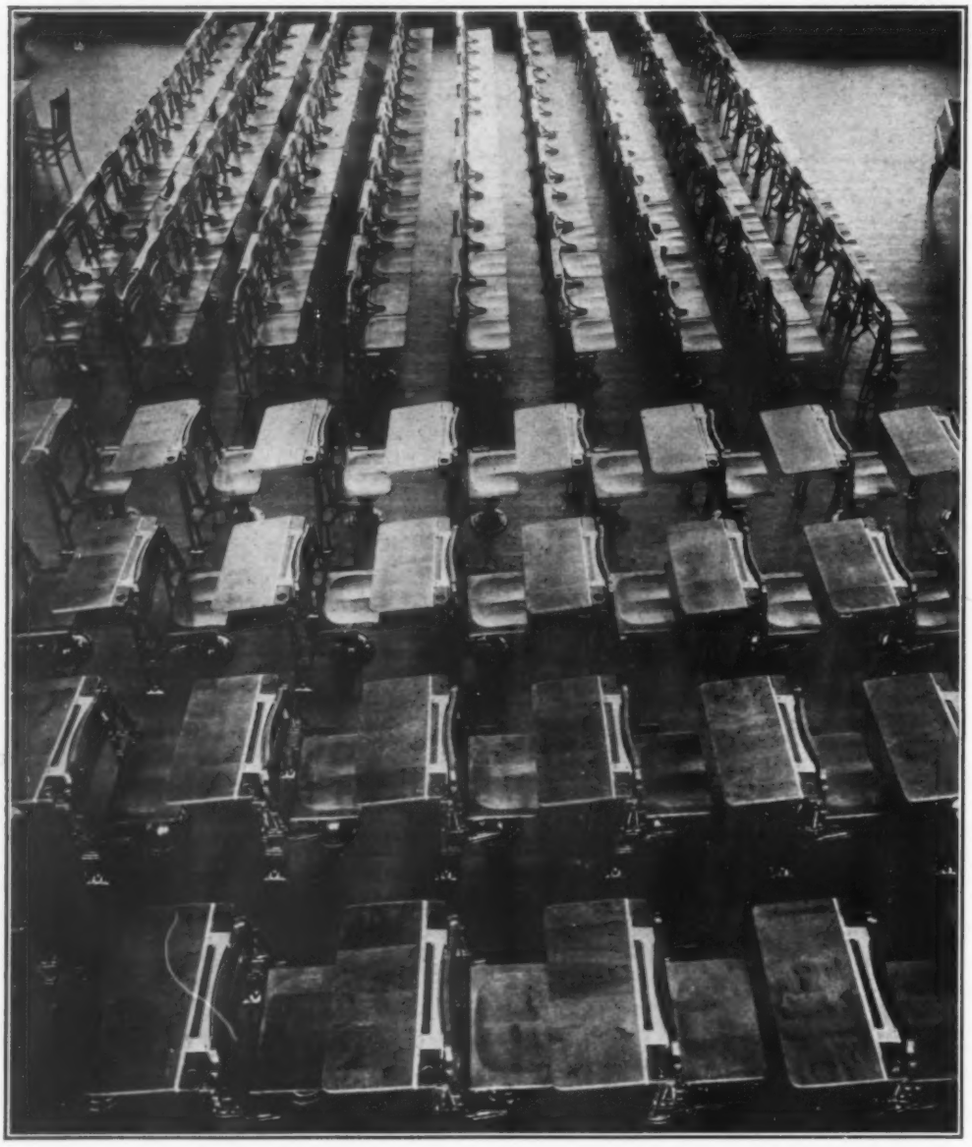

This View, taken from the balcony in a large High School Auditorium, shows a small portion of the Deskor Chair installation. This room instantly can be converted for use either as study hall or assembly hall. Both arrangements are shown in the picture.

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VOLUME IV NOVEMBER, 1929 NUMBER 5

Who May Be a Superintendent of Schools?

Were the status and the duties of superintendents clearly defined in the statutes, boards would be able more readily to measure the qualifications of those who apply for positions

By B. F. PITTENGER, School of Education, University of Texas

"THE superintendent of schools," writes Professor G. D. Strayer,[1] "has the largest responsibility placed upon any governmental officer in our modern society." In contrast to this is the statement of Professor F. W. Hart,[2] that "educational leadership," while "subject to professionalization, is not professionalized." Both of these statements, interpreted generally rather than individually, are supported by persuasive evidence.

Professor Strayer, on the one hand, recalls that public-school superintendents are charged with the management of the biggest "big business" in America to-day. The public schools of the country involve an annual expenditure of close to two billions of dollars, and the care of a permanent investment of possibly five billions more. The heads of these schools are the leaders of an army of nearly a million teachers and over twenty million boys and girls. More important still, these public-school heads carry the chief responsibility for properly developing the minds and characters of the country's future citizens. Certainly Professor Strayer's statement does not appear extravagant.

To support Professor Hart's criticism we have the results of several surveys of the qualifications of superintendents in different states and groups of states. One such study will illustrate them all. The one selected here describes the training and experiences of superintendents in the New England states, and is chosen because that section of the country is recognized as educationally progressive. Better conditions will hardly be expected elsewhere.

The author, Dean T. E. Benner,[3] as an approach to his study, sets up a very modest requirement for the work of superintending public schools. "Those superintendents who had less than four years' training beyond the high school, or who had four years' or more training that included no professional studies, were classified as 'inadequately trained.' Those who had four years' or more training beyond the high school, including professional studies, were classified as 'adequately trained'." His findings are:

	Per Cent Inadequately Trained	*Per Cent Inadequately Trained*
Union (small) schools ...	34	66
Cities under 25,000	42	58
Cities over 25,000	24	76

The best conditions exist in cities under 25,000 in population. The situation in the small union schools is attributed to poor salaries, while "in the larger cities, though salaries are fairly good, positions have been filled largely by veterans in the service—that is, on the basis of apprenticeship rather than professional training." In none of these groups, however, do as many as 50 per

cent of the superintendents measure up to the limited degree of professionalization that was set as the standard. The study clearly supports Professor Hart's statement, which he bases on other objective data relating to the schools of California, that "educational leadership is not professionalized."

The same point is made by another writer in these words:

"Superintending a school is not usually recognized as a separate and distinctive profession that requires prerequisite training or special qualifications. Men who fail in other professions can often fall back on school work and get a job as city superintendent of schools. . . . It is not at all unusual for graduates of law schools to hold positions as superintendents for a year or two before practicing law. Many exsuperintendents who left the profession to become farmers, insurance men, realtors and merchants, finding money tight during the recent financial depression, flocked back to school work. Men who had trained and qualified themselves for a life work of superintending have been kept out of employment just because these 'prodigal sons' came back and underbid them."[4]

Such conditions are disheartening. The heaviest collective responsibility in all officialdom cannot be borne by untrained officers. School leadership, a real profession, is treated as a job for amateurs. What effects, moreover, may be expected upon the larger movement for professionalizing teaching? Followers imitate leaders and unprofessionalized superintendents are not likely to stress professional qualifications in their subordinates.

Three Practical Suggestions Offered

But what, after all, can be done about the matter? In answer, this paper proposes three definite lines of attack, all practicable, and at least two of which have already been tried and found helpful. These are: (1) statutory definition of the professional duties and functions of public-school superintendents; (2) certification for eligibility to school administrative positions based upon adequate professional training, and (3) efforts to secure a more painstaking selection of superintendents by local boards of education. These suggestions will be discussed in order.

First, the professional duties and functions of the public-school superintendent should be adequately defined by statute. One important source of our present difficulties is that school boards and the general public and frequently even the superintendents themselves have no clear notion of what these functions and duties are. Legalizing the status and defining the responsibilities of the superintendency would be enlightening to all concerned.

To-day, in many states the office of local school superintendent has no definite status in the statutes, but is, as D. C. Rogers says, "a sort of extra-legal position." The practice of employing more or less expert advisers and executives is kept up by force of custom, not of law. Superintendents might be described as "habits," and sometimes bad ones, of school boards. Generally speaking, school boards are at liberty to employ or not to employ superintendents of schools, and having employed them, to assign to them such duties as the boards see fit. An inevitable result, as well as cause, of this condition is failure on the part of everybody to perceive the potentially professional character of the superintendent's task.

Superintendent Should Have Definite Status

The point of our present suggestion is that the superintendent should have as definite legal status as does the school board. "The legislature should recognize the superintendent as an official of the state, responsible for performing certain specific duties within his subdivision of the school system. . . . In defining the responsibility for exercising certain administrative functions, the initiatory and executive phases should be vested in the superintendent, and all approval phases in the board of education."[5] In the law, the various specific functions vested in the superintendent should be enumerated, particularly those that involve distinctly professional knowledge and skills. These should include such matters as selecting, assigning and promoting the staff, revising the course of study, selecting supplies, choosing sites and planning buildings, preparing the budget and supervising the accounts.

This first suggestion is summarized in J. C. Morrison's statement:

"As society adds more and more responsibility to the public school system, the need for better trained and more responsible administrative leadership of schools is recognized. . . . The laws governing school administration should be formulated to build up this responsible leadership and so safeguard the public interest."[6]

Second, no one should be eligible for a position as school superintendent who does not hold a legally endorsed certificate from the state department of education approving his professional qualifications for filling that position. At least thirteen states now enforce this reasonable requirement. A few of these require only one general certificate for all administrative and

supervisory positions, but most of them issue a different certificate for each special type of work. Graduation from a standard college or university is fixed as a minimum in practically all. The completion of a stipulated course in the professional branches, including work in administration and supervision, may be required.[7]

E. P. Cubberley writes:

"Two types of this form of certificate usually are provided for—one for the successful practitioner and one for the university trained worker. Ultimately the practitioner type may be expected to give way to the other. The trained educational leader is the modern social engineer, and to be effective he must possess broader training and be able to see farther than those whose work he directs."[8]

The "practitioner's certificate" is merely a transient device to provide for the successful administrators who are already established in the field. The certificate based upon training is intended for new workers, as a condition for future admission. Gradually the training certificate should completely displace the other, as the older superintendents drop out.

Third, every possible assistance should be provided for boards of education in meeting their primary responsibility of selecting new superintendents of schools. "Why," asks E. Mendenhall,[9] "is the selection of the superintendent the most important duty of a city school board?" And he answers: "Because . . . the board will look to the superintendent as its expert adviser in all educational and administrative problems." As the advice is, so will the practice be. W. W. Theisen, in his study of school-board duties, ranked the selection of the superintendent as first.[10]

What Factors Influence Choice?

Despite its importance, this function is often perfunctorily performed. That some boards do it conscientiously and well and that the general average of board efficiency in this regard is advancing, are not questioned. But it also cannot be denied that the average level of performance is still inexcusably low.

One study of this function, embracing reports from 971 school officers and apparently 425 schools, in 46 states, shows that more than 50 per cent of the boards of education still base their selection upon applications and submitted recommendations. Even advertising for applications is not unknown. Comments on existing practices include such phrases as "most boards work blindly;" "accidental selection of those who chance to please;" "local influence the deciding factor;" "pressure of commercial and civic clubs, churches and fraternal organizations;" "influence—money sometimes;" "jungle methods." A discouraging report, surely, for school systems that would probably be rated among the best in the country. However, 33 of the boards used scouting committees and the active-search method, and 126 made their selection after securing a careful survey of local needs and from a list recommended by experts of candidates qualified to meet those needs.[11]

An unpublished study of 96 school systems in Texas which elected new superintendents in the Fall of 1926, yields the information that 92 per cent of these boards chose among seeking applicants, and few of them, on their own statements, took the trouble to follow up references given. Personality is described as the predominant factor in selection. This study is perhaps more indicative than the former of conditions existing in the smaller places.[12]

Flood of Applicants Bewilders Board

Some of the reasons for this situation are obvious. For example, since school boards frequently change more rapidly than superintendents, the individual members are usually inexperienced when confronted with this issue. In comparison to its importance, the occurrence of this duty is extremely rare. Experience operates not at all or indirectly. Again, the very nature of the situation means that the board is without its customary adviser in all matters concerning appointments—the superintendent. In four cases out of five, we are told,[13] superintendents change on the invitation of school boards rather than on their own initiative. Consequently, even if he wished, the outgoing superintendent could be of little service.

Boards, moreover, are frequently misled by the flood of applications loosed upon them into the false belief that their task is to be easy. They get the impression that available material is abundant, if not excessive, and that they need only to wait and choose. Thus for the 96 Texas superintendencies vacated and filled in the Fall of 1926, there was an average of 12 applicants for each place, 9 in person. In the group of larger schools this average was 21. In 96 schools similar in size and location to the foregoing, an average of 10 applications were made for each superintendency, although none of these positions had been vacated.[14] It would appear that, in both cases, most of the applicants were habitual "appliers," who did not wait to verify the fact of vacancy.

The problem, then, is to find means for assisting local school boards to perform a task for which they are usually unprepared by experience, and at a time when they are without the service

of their customary adviser and exposed to the machinations of the professional job-seeker. The aid given must be such as to counteract the tradition that personality is the principal item in the equipment of a good superintendent of schools. What can it be?

Clearly, the first two suggestions contained in this paper should be materially useful at this point. With the duties of superintendents defined in the statutes, boards can more readily measure the qualifications of those who apply. And with the requirement that all applicants must be properly certified as to their professional attainments, boards will be protected from the extremely unworthy. But these requirements come to pass slowly, and meanwhile boards must continue to choose new executive officers and will need other help. Also, even where the superintendent's status is legally defined, and where administrative certification exists, boards will still need assistance in securing, not merely a good, but the best man available for each set of local conditions. For these reasons, with no pretense of offering a complete or final program, this paper presents the following suggestions:

1. Let the state department of education, or the superintendents' section of the state teachers' association, prepare a short and clear statement of the importance of the superintendency, of the need for getting the right man in each place, of the dangers of being victimized and of the board procedures that are likely to bring success. By whomever prepared, this statement should be sent out every Spring from the state department of education to the controlling boards of all school units concerned.

Definite Plan Should Be Outlined

2. Let each local school board, while still enjoying the services of a trusted superintendent, plan under his guidance for its procedure when it shall be seeking his successor. Possibly this suggestion sounds like a request to the superintendent to aid in planning his own funeral. But every holder of this position knows that sooner or later he must relinquish the place, and if he possesses a modicum of professional spirit he will wish to be followed by a creditable successor. As a part of the "rules and regulations" which every superintendent should seek to secure in his school, there should be a definite outline of the procedure to be followed by the board when a new superintendent is being sought. Such regulations will be especially valuable if the selection should happen to devolve upon a new and inexperienced membership.

3. The third suggestion concerns an ethical code for superintendents themselves. Ideally, perhaps, superintendents should refrain from canvassing for new positions and should leave all initiative in the filling of vacancies to the boards concerned. Active canvassing has at least two deplorable consequences. It leads boards to believe that there is a surplus of good material and it encourages the professional jobseeker, by placing a premium on salesmanship rather than on professional qualifications.

"Appliers" to Go on Black List

But in most places at present this ideal self-restraint can hardly be expected and might not be best for the schools. Only the true professionals would strictly obey the code. With school boards disinclined to the method of active search, the field would thus be turned completely over to the professional "appliers." Something clearly should be done to restrain these habitual job-hunters, particularly those who are careless in discriminating between positions which are vacant and those which are not. One means of controlling their vicious activities would be a professional black list compiled by the superintendents' section of the state teachers' association.

Another abuse of the present application system is the custom of many younger superintendents of applying for every known vacancy that promises advancement. This practice defeats its own ends. It leads to inevitable price-cutting, and to the belief of school boards that there are more good men than there are places. The superintendents' code should not tolerate this practice. A definite and low limit should be put upon the number of applications that one man may have outstanding at one time. Why should not an applicant be required to conclude each separate effort to secure a new position before he is allowed to make another approach? Here again, the superintendents' section of the state teachers' association might be able to act effectively.

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The Problem of Classification and How to Meet It

By NELLIE B. HUNT,

Principal, Tracy Elementary School,
Lynn, Mass.

ON THE night of December 8, 1927, the Tracy Elementary School, Lynn, Mass., a twelve-room elementary building, was completely destroyed by fire. Only the brick retaining walls remained on the morning of the ninth. Plans were immediately made for rebuilding the structure on a thoroughly modern and up-to-date basis. The new building was ready for occupancy in September, 1928, when the new term began.

This rebuilt structure was larger than the old one had been, containing sixteen classrooms, a combination gymnasium and assembly hall, an office, supply rooms and the usual service rooms of various types. Six of the classrooms were assigned to the special English classes for foreign language speaking children, leaving ten to accommodate 450 pupils of Grades 1 to 6, inclusive. As the building was not ready for occupancy until the very day of opening for the new term, and as boundary lines for the district to be served could not be determined until the last day, the pupils who reported in September could not be scientifically grouped within grades until after the school year started.

When boundaries were finally fixed and the enrollment became fairly stable, a conference was arranged between the director of research and the building principal, in order to determine the best means for grading and grouping the pupils satisfactorily.

The new grouping could have been worked out at that conference and could have been made effective by means of a bulletin to teachers, telling of the transfers to be made and setting a time for them to become effective. If ability grouping had been used previously and if the teachers had been familiar with such a procedure, this plan might have been used. It was suggested, however, that not only was regrouping necessary but that the teachers needed to be made aware of the reasons for it and of the values to be expected from it.

Consequently a meeting of the teachers was called and they were requested to assemble, in tabulated form, the available information regarding the pupils. This information included I. Q.'s, E. Q.'s, teachers' opinions as to ability, effort and accomplishment, C. A.'s and physical development. The I. Q.'s and E. Q.'s were expressed in numerical form and also in terms of X, Y, Z or special. For this purpose, the following values were used:

I. Q. of 110 or above .....X group
I. Q. of 85 to 109 .....Y group
I. Q. of 75 to 84 .....Z group
I. Q. of 74 or below .....Special

The teacher's opinion was also expressed in terms of X, Y, Z or special. Then a summary was made for each pupil, so that every child enrolled was listed as belonging to an X, Y, Z or special group. A few of the X pupils were recommended for special acceleration. The results of this tabulation, showing the hit-and-miss type

TABLE I—THE ROUGH GROUPING IN EFFECT WHEN SCHOOL OPENED IN SEPTEMBER

	Group X	Group Y	Group Z	For Special Class	For Double Promotion	Total in Class
Grade I—Room 15	3	19	17	0	0	39
Grade I—Room 16	4	15	18	0	0	37
Grade I—Room 12	0	8	11	3	0	22*
Total	7	42	46	3	0	98
Grade II—Room 11	18	25	6	0	0	49
Grade II—Room 12	0	3	5	3	0	11*
Total	18	28	11	3	0	60
Grade III—Room 22	8	8	0	0	0	16*
Grade III—Room 23	5	20	12	3	0	40
Total	13	28	12	3	0	56
Grade IV—Room 21	12	24	3	1	0	40
Grade IV—Room 22	1	13	7	2	0	23*
Total	13	37	10	3	0	63
Grade V—Room 25	15	15	1	0	2	33*
Grade V—Room 24	0	28	12	2	0	42
Total	15	43	13	2	2	75
Grade VI—Room 26	7	29	7	0	1	44
Grade VI—Room 25	0	0	9	0	0	9*
Total	7	29	16	0	1	53

*Note that these rooms house pupils of two different grades.

of grouping then in force, are shown in Table I.

When this work was completed, the teachers themselves saw that the grouping then in effect was very poor indeed, and suggested that a series of transfers be worked out to improve it. But making the transfers work out properly was not so easy as it first appeared, because of the double grades housed in three rooms.

It was at this point that the director of research was again called upon to assist. He suggested that the teachers take this problem of classification as the topic for a local research council and submitted a list of references upon tests and testing, the use of test results and the classification of pupils. The teachers agreed to work upon these topics and covered the references furnished them in about a week. Then another meeting was called and the findings were discussed.

The material shown in Table I was placed on

TABLE II—THE NEW GROUPING WORKED OUT AFTER STUDYING THE SITUATION

	Group X	Group Y	Group Z	For Special Class*	For Double Promotion	Total in Class
Room 11—Grade II	..	28	11	..	..	39
Room 12—Grade II	18	..	..	..	..	..
Grade I	7	10	..	..	..	35
Room 15—Grade I	..	32	7	..	..	39
Room 16—Grade I	..	..	39	3	..	42
Room 21—Grade IV	..	25	10	3	..	38
Room 22—Grade III	15	..	..	..	..	..
Grade IV	13	12	..	..	..	40
Room 23—Grade III	..	26	12	3	..	41
Room 24—Grade V	..	27	13	2	..	42
Room 25—Grade V	15	17	..	..	2	..
Grade VI	8	..	..	..	1	43
Room 26—Grade VI	..	28	16	..	..	44

*Most of these pupils were transferred to special classes in other buildings.

the blackboard and a general regrouping was planned. This regrouping was based upon the following principles:

1. One straight first grade, one mixed first and second grade, one straight second grade, one straight third grade, one mixed third and fourth grade, one straight fourth grade, one straight fifth grade, one mixed fifth and sixth grade, one straight sixth grade.
2. In a mixed grade the brighter pupils of both grades shall be grouped together. This is necessary so that the pupils of the upper grade may be kept in advance of those in the lower grade.
3. In a straight grade the lower sections of that grade are grouped as shown in Table II.
4. The size of class is kept above thirty-five and below forty-five pupils.

As a result of the application of these principles, the grouping shown in Table II was arrived at and accepted.

Some of the teachers felt that regrouping upon such a large scale—the transfer of some fifty-seven pupils from room to room was involved—would provoke protests from the parents, but at the third meeting of the group, it was decided to try the experiment, as the changes were being made for the direct benefit of the pupils concerned. Some protests did develop, but all of them were frankly answered and the parents were satisfied that the changes would be beneficial. At this same meeting the teachers requested that group conferences of this type be continued, so that the best methods of handling various sections and types of pupils could be studied.

Following this request, the director of research arranged to visit the school on Wednesday of each week, remaining for about an hour after the pupils were dismissed. He also arranged to furnish reading references and personal suggestions for the guidance of the group. The teachers also made a visit to the research department office in order to get a general view of the testing work and the uses of the test results as they were being applied throughout the city. Records, files and summaries were studied on this visit, the individual testing work was observed, and the complete sets of tests from several publishing houses were exhibited. The teachers were invited to make full use of the department's facilities, including the new professional library.

First graders who are beginning their school experiences with a teacher who believes in the child-centered plan.

In order to follow up the grouping and make the greatest use of it, attention was centered upon fitting the curriculum to various groups and upon the whole matter of curriculum reconstruction in general, during the later meetings of the group. At some of these meetings, the director of research acted as chairman; at some, it was the building principal who acted in this capacity, and sometimes classroom teachers functioned in this way. Every teacher included in the group made

at least one report upon material that she had looked up or upon the progress being secured by using certain techniques with her group. Sometimes visitors from other buildings were invited to attend the meetings and once a number of staff officers, including the superintendent, were present.

The Z group in the sixth grade that had been in the same room with the X group, fifth grade, had up to the time of regrouping, shown decided discouragement, as they saw these younger pupils not only catching up, but surpassing them in many studies. When united with a Y group of their own grade, a great change in morale became apparent.

This same change was observed in the classroom which was reorganized into a mixed IV X, Y and III X group. When the teacher had had the IV Z and III X groups together, she had unconsciously been neglecting her X pupils who were resourceful and law abiding, and giving her attention to the Z group who were quite the opposite.

As Table II shows, this teacher was given 35 Y and Z pupils. This arrangement added fully 50 per cent more efficiency to a young teacher who could master her problem when the group was homogeneous.

After the transfers, the mixed IV X, Y and III X group were able really to enjoy work which frequently included not only important fundamentals, but also social and ethical understanding of their own school problems. The III X group also came into its own when the changes were made.

The Problem of Curriculum Construction

To arrange pupils according to ability grouping is but one method of developing the larger problem of curriculum construction which must of necessity follow it. The ability of these various groups who travel at different rates and comprehend their studies through quite different media must be considered in any plan of curriculum construction.

Consequently, the members of the research council found that their inquiries led them naturally into the field of curriculum reconstruction to meet the needs of classes organized upon a plan of ability grouping. In this matter they could have worked for many weeks or even years. It was decided, however, that it would be possible merely to explore, in brief fashion, the basic fields to be considered. At its subsequent meetings, the philosophy and psychology underlying curricula were discussed, curriculum reconstruction techniques in use elsewhere were studied and explained and applications to the local situation were proposed. In this work, the council was again assisted by the director of research, and the following aids were enlisted: books that presented the basic philosophy of curriculum construction; recent courses of study, and activities in the classroom.

With this investigation as a basic background, the teachers of this local research council are now ready to start upon an intelligent participation of a citywide curriculum adjustment program.

Combating Contagion by Keeping the Schools Open

Closing schools to control the spread of contagious diseases has but one effect, that of scattering the infection, Harold B. Wood, epidemiologist, Pennsylvania Department of Health, points out in an article in the *Pennsylvania School Journal.* When children are out of school, their opportunities to disseminate the infection become markedly increased, Mr. Wood says. Those who are beginning to develop a disease and who then are in the most contagious stage, and the other children who have the disease in such mild form as not to be confined to bed, mingle with others and infect them.

"When schools are closed nobody knows who are sick or where they are, but when schools are kept in session all who are sick can readily be located and thereby controlled," the article continues. "With the children in school the original case of the outbreak can more easily be discovered and further spread of infection from him averted. Close, daily, individual examinations should be made of the children of the involved classes for three successive days, immediately after the first case of the disease becomes known, and then repeated at the end of the incubation period of the particular disease when secondary cases are apt to appear. Every child showing any symptom or sign of the particular disease, including suspicious coughing, should be excluded at once. When measles or whooping cough appears in a class, a list should be made of all children who are then coughing. After the end of seven days for measles and ten days for whooping cough, a close observation of all children should be maintained for several days. Any child then coughing, who was not coughing at the first listing, should be immediately excluded from school as a suspect for a few days until a definite diagnosis of his condition is possible. All these examinations should be made preferably by a physician or by a nurse.

The Ever Widening Fields of Visual Education

Motion pictures, long recognized as an effective aid to teaching in the schools, are extending their educational appeal to the home and to industry

By J. H. McNABB, Chicago

PSYCHOLOGISTS say that nearly 80 per cent of the ideas that enter the human brain, travel there by eye. Because of the lasting impressions that are created by the attention holding power of the motion picture, it has become the popular, modern means of education.

Mechanical inventions of the twentieth century not only bring us learning, but they bring it in a way that we can easily digest. This must be so for a generation that literally runs while it reads. This explains why we must make use of these new inventions for educational as well as for entertainment purposes.

Many of us can remember the early days of the "nickel show," our first acquaintance with motion pictures. Our five cents' worth entitled us to sit in an old store building—all seats on a level—where flickering, blinding films, dragged their jerky way through stories that were quite impossible to follow. One hardly cared what it was all about. There it was, the miracle itself of moving pictures. We expected those slight interruptions explained by "Just a moment, please" or "Changing films." Perhaps we shall live to recall the early days of radio when we were asked to "Please stand by for station announcements." In other words, difficulties that we take for granted along the way of progress eventually disappear. New uses and new methods make them obsolete.

Growth of the Movie

Before long the five-cent movie became a thirty-cent movie, and it was worth thirty cents. The stories, told in several reels, were coherent; the auditoriums were spacious and there was even music of a kind. When all the wiles of marble halls and splendid orchestras were added to the attraction, the public gladly paid the price of glamour and still thought of movies only as an entertainment.

There were those however, who foresaw another use for movies. And from those visions a mighty educational force has been produced. It operates, not in the school field alone, but in the home and the industrial fields as well. The salesman who sells tractors wishes to present a convincing story of their power. Yet a tractor cannot be carried in a brief case to be put on exhibition. The modern salesman, however, just as surely takes his tractor with him. Industry has seen the value of the small projector and the movie film to make a living story that will sell the goods. Nor is modern education lagging behind in the use of motion pictures. It is finding them effective in "selling the goods" to growing minds.

Film Aids in Teaching of History

Yale University has sponsored a series of films to be used in connection with the book teaching of history. This monumental work is called the "Chronicles of American Photoplays." Imagine the opportunity of the modern school boy who can sail the unknown seas with Christopher Columbus and glimpse with him the shadowy shore of a New World; who can experience the hardships of the early colonists in wresting a foothold from a wilderness; who can answer the alarm drum and assemble with the Minute Men at Lexington and Concord; who can see the second Continental Congress adopt the Declaration of Independence, and view the subsequent excitement in Philadelphia; who can campaign with General Washington; who can explore with Daniel Boone; who can know General Grant and at the same time understand General Lee, both present in a picture without a hint of prejudice to obstruct his knowledge. And so it goes through a long list. Absolute attention to detail has recreated the scenes and people as they really were, so that to-day we may live in historical yesterdays, so vivid that we cannot forget them.

This is the real reason for the educational success of motion pictures.

The University of Nebraska and other colleges

now offer a history course given with the "Chronicles of America Photoplays." Large groups of schools and colleges are using moving picture equipment. The time is not far distant when only a list of those schools that are not using visual educational methods will excite any curiosity.

How reasonable it now seems to have our athletes taught by slow motion pictures that perfect form, that technique which means victory. Civics, geography, history and many other sciences are also more effectively taught to-day because of motion pictures in the schools.

Not only have leading educators added motion pictures to their curricula, but they have also thrown open their schools to experimental and research work, to determine the relative value of motion pictures compared to oral instruction methods. We can hardly appreciate the extent of developments made possible by such beginnings. Looking backward from the future, it will all seem a simple step—the world at last awakened to the opportunities offered by motion pictures. But in those old days when we paid our nickel for a one-reel feature, we failed to sense the motion picture future that we have lived to see. Did we suspect that in another twenty years there would be regular film libraries from which could be rented the films best suited to our needs?

Provides Home Entertainment

Nor have the educational uses of the films stopped with the schools. Movies are now being made in the home. Every member of the family is a star in the "play" that perpetuates home life for all the family generations to come. The making of home-made movies is simple—a compact projecting machine, a plug going into a light socket and a few motions of threading the fire safe films.

The film library, too, has an important place in the home. It contains educational films as well as those that have been chosen to provide entertainment alone. The family may choose its own subject and have the best movie made presented at home with the best radio music.

Who would have thought of such a scene just twenty years ago? To-day we take it for granted. That is always the history of growth—great developments from small beginnings. Twenty years from now writers may condense their novels into twenty minutes for the radio, as has been predicted. Libraries of films may have an importance equal to libraries of books, and in the schools a visual education covering every subject will have made this game of learning so attractive that children will be wise without effort. Such is the vision opening to us, now that motion pictures have been made the property of schools and homes as well as of entertainment palaces.

A School Health Appraisal in Illinois

Thirty-two school communities of Illinois during the last year have taken the lead in a school health appraisal of the state, according to the *Illinois Teacher*.

The appraisal is divided into three parts. The first part is devoted to the building, its equipment and grounds, together with their sanitary care in relation to the health of the children and of their teachers. The second part concerns the professional health service of doctors, nurses, dentists and health officers. The summer round-up for detecting and correcting physical defects in the children is emphasized as is also the making of cumulative records for each individual child so that the history of his health progress will be available throughout his school life.

The third part of the appraisal deals with the time schedule of the regular school program in terms of accepted health standards. The importance of play and exercise is emphasized. Weighing and measuring as a device to interest children and their parents in desirable health habits are discussed. Other matters discussed include the course of study, the supply of hygiene text and reference books, charts and other illustrative health materials, the time devoted to regular health inspections and instructions and the special health education activities, correlations and projects.

The tentative form used for these surveys was prepared and sponsored as a joint project by the Illinois Congress of Parents and Teachers cooperating with the Division of Child Hygiene, Illinois State Department of Public Health.

Tuition for Repeaters in the High School

Pupils who flunk their school courses because of laziness and who have to repeat should be charged $30 for each course they have to repeat, W. M. Kern, superintendent of schools, Walla Walla, Wash., believes. *Time* quotes Superintendent Kern as saying that "no pupil could complain since each . . . would have as much money spent on him as any other."

Lazy pupils cost more to educate than smart ones who pass everything. Mr. Kern thinks that this is unfair in a system in which each pupil should benefit equally from the public funds. Mr. Kern asked his school board to evaluate the high-school course and suggested $480 for the entire curriculum, or $30 a course.

Radio Broadcasting as a Valuable Factor of College Service

Facilities for presenting educational courses in subjects of widespread interest and entertaining programs by student talent almost unlimited in majority of institutions of higher learning

By J. C. JENSEN, Department of Physics and Director of WCAJ, Nebraska Wesleyan University, Lincoln

WHILE only eight years have passed since regular programs of informational and entertainment value have been offered to the public through the radio-telephone, in that brief period broadcasting has developed from an interesting novelty into one of our most important channels of communication. It holds an unique position because of its tendency to combine the news features of the daily papers, the recreational values of theaters and concert halls, and the educational and moral influences of our schools and churches.

In all of these fields institutions of higher learning are not only directly interested but they possess facilities for service that cannot easily be duplicated by private concerns. To illustrate more fully, such a news item as a weather forecast can be handled much better by a weather bureau official speaking from his office on the college campus than by an announcer who has no special knowledge of, nor interest in the subject. Markets and crop reports may be read as so much tabulated matter but take on increased meaning when discussed by a professor of agricultural economics who makes constant study of the problems involved. Most public questions constitute a fruitful field for similar treatment.

In the realm of recreation the university can provide band and orchestra concerts, glee clubs and oratorios of never ending variety because

The main studio at KOAC, the radio broadcasting station at Oregon Agricultural College, Corvallis.

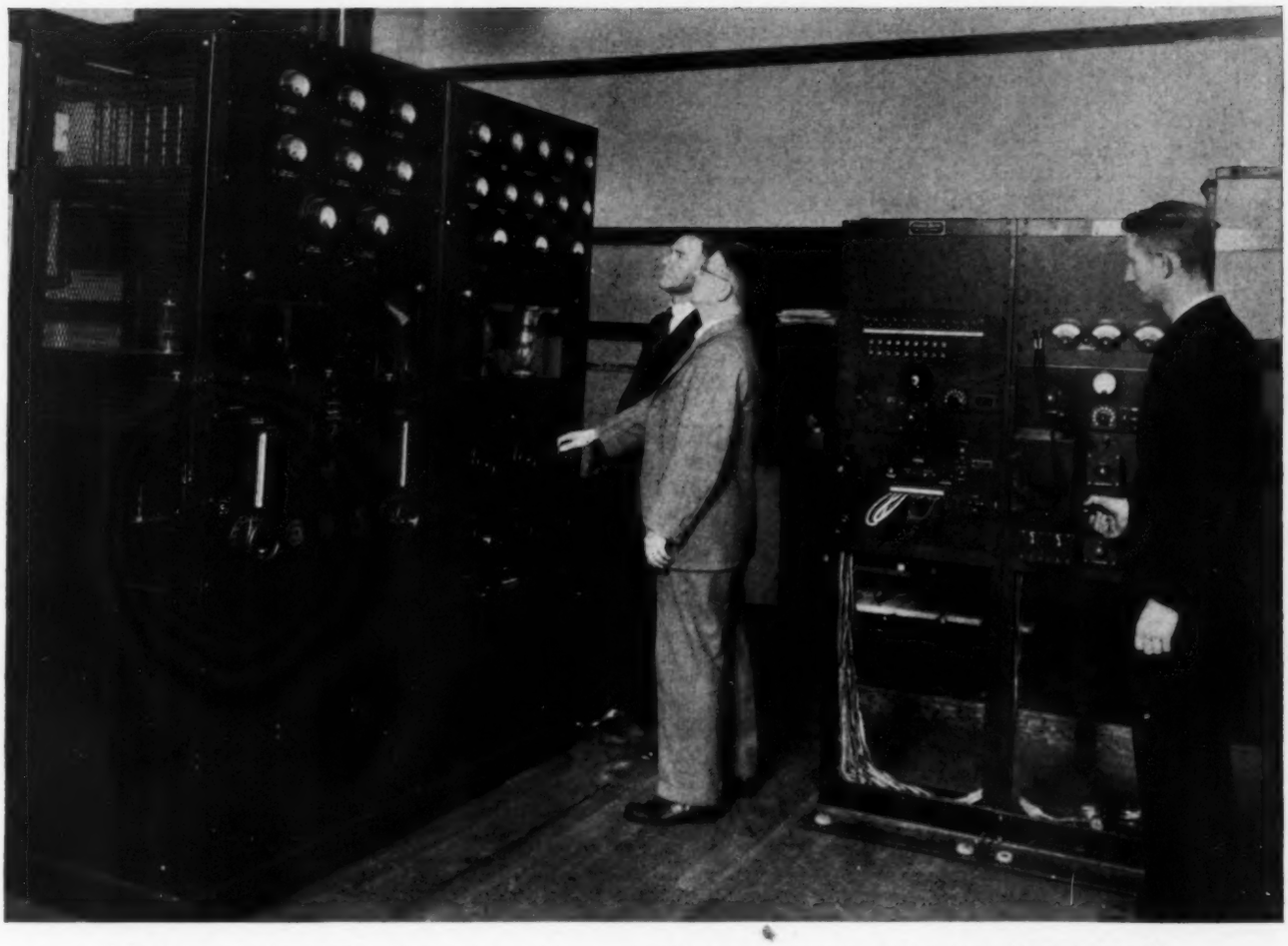
each year brings in new talent, new organizations and new methods of instruction. The musical tastes and ideals of those in charge of a college of fine arts are high and tend to neutralize the excess of cheap music now so generally condemned. In the field of sports the educational institution offers its strongest recreational attraction, so well illustrated by the demand for the broadcasting of football games in the autumn. To the thousands who annually witness the contests between their favorite teams in various parts of the country must be added the tens of thousands who follow the games with almost equal interest in the comfort of their homes. In some regions basket ball attracts its share of attention also.

In the educational aspects of broadcasting lie the greatest possibilities for the college station. The public is becoming increasingly interested in the use of the receiving set for obtaining a broader knowledge of the world's affairs and those who have charge of extension study courses have begun to utilize the microphone for establishing personal contact with their students. Discussion of questions of general public interest can best be had through a series of short but connected talks on regular schedule in which the various phases of the subject are dealt with consecutively. No registration is required and the speaker must depend on the value of his message to obtain hearers. Following are some general themes used during the past year for series of four to six twenty-minute talks by members of our faculty: "What Ails Our Youth?" "How We Elect a President," "Investments and Securities," "The Relation of the Ductless Glands to Health" and "The Workman's Compensation Law." On the basis of inquiries received our listeners were most interested in investments, the health question being second.

Where extension courses for credit are given, a lecture by radio, supplemented by the usual lesson outlines and questions, has been shown by trial to give much better results than the impersonal way hitherto employed. The instructor's voice and personality are projected directly into the work and errors and questions on the preceding lesson report taken up. In one of our radio courses, which has been offered also at institutes, sixty-eight out of 110 enrolled actually completed the lessons and passed a final examination, a larger ratio than the same instructor had obtained by the direct lecture method.

The colleges have been accused of being slow to adopt the radio for purposes of instruction, the

Above is shown the announcer's room at KOAC with the microphone and other apparatus conveniently at hand.



KOAC is one of several college stations where transmitters of unusual design have been developed.

statement being based on the relatively small number of courses offered for credit. One reason for this is the well known conservatism of college teachers relative to innovations of any kind. A much more important reason is the fact that extension courses must be offered in the evening hours because those who take them are principally people who are at work during the day.

Evening hours cannot be obtained for class work in these cases where the university operates through a commercial station and when the college operates its own transmitter it often finds itself limited to daylight hours to make room for more jazz, or crowded into a channel so congested that the range of satisfactory reception becomes too limited to reach the school's constituency.

It is obvious that courses in which the ear is more essential than the eye in gaining information are especially adapted to broadcasting. These include the foreign languages, English and music. History, social science and philosophy are more easily presented understandingly to the distant listener than physics or biology. The efforts thus far made to dramatize history, agriculture and hygiene have resulted in a vastly increased audience of persons who wish to be entertained or who find it difficult to think. Such methods serve well for the treatment of outstanding topics or events but cannot provide either the detail or continuity required for serious educational work.

The Radio Act of 1927 provides that "public convenience, interest or necessity" shall be served by the broadcaster and that the "citizenship, character, and financial, technical and other qualifications" of the applicant for a license shall have consideration. Public interest in institutions of higher learning has been established for many years and was never at a higher level than at present. In technical and other qualifications they also rank high.

Among college stations where efficient transmitters of more or less unique design have been developed are WOI, KFMX, KOB, WEAO, KOAC and KFDY. WOI was one of the first in the Middle West to go to crystal control. KFMX, to our knowledge, is the only station in the United States operating successfully as much as 500 watts on grid modulation. WHA was building its own power tubes before they could be purchased regularly from the commercial companies. The problems connected with operating and maintain-

ing a broadcasting station have always engaged the interest and attention of both faculty and students of engineering schools where transmitters have been installed. Actual experience with powerful equipment is as important in this field as it is in aviation and a five-watt short wave set is about as valuable for training purposes as a 22-caliber rifle for the coast artillery.

The genesis of the broadcasting idea in the college has in many instances followed a course similar to that at WCAJ. A one-kilowatt spark transmitter, licensed as 9YD, was installed about fourteen years ago. At the request of amateur operators, especially those located on branch lines of the railroads, a daily news and weather bulletin was sent out until 1921, except for the silent period during the World War. In 1920 a twenty-watt radiophone was purchased and used in connection with the spark transmitter until October, 1921, when a regular market service was begun at request of state officials. The following May work with the spark set was discontinued and experimental 9YD became broadcasting station WCAJ. The transition period from the original twenty-watt set to our present 500-watt composite outfit was filled with valuable engineering experience.

Local Conditions Govern Programs

The question may well be raised whether the university is warranted in operating a transmitter of its own rather than to send its programs through commercial stations. The answer must depend to a large extent on local conditions. If regular and extensive schedules are contemplated, the commercial station cannot in fairness be expected to give free service when the time can be sold at present prices. If regular rates are paid the expense runs higher than the maintenance of a station on the campus. There have been repeated instances where lecture courses and other educational features were dropped from the schedule of commercial stations as soon as they could sell the time for advertising purposes. Faculty and students take greater interest in an institution that speaks directly for them and to their friends and constituents. Professors discussing controversial subjects also feel greater freedom to speak their convictions without fear of censorship from the campus station. For the small college or for the university whose broadcasting requirements are limited to a few special lectures and an occasional concert or athletic contest, the most satisfactory plan usually will be that of operating through a nearby commercial station. Where the school maintains its own transmitter it should jealously guard encroachment of others on its special prerogatives and should have sufficient power to cover its field effectively, say 500 to 2,000 watts. A rich and varied program is necessary in order to obtain and hold a regular audience.

If some outside broadcaster is permitted to feature the football games, oratorios and commencement exercises, leaving to the college station the purely educational activities, the latter loses prestige with its alumni and with the general public by comparison.

Studying the Educational Forces

A study of the educational forces of the national government is now in progress, the *Survey* reports. This study is being made by an advisory commission in education appointed by Ray Lyman Wilbur, secretary of the interior. The possibility of bringing the nation's educational forces together under an assistant secretary of one of the departments is also under consideration.

The committee has been divided into three groups: One will consider the educational activities of the government, their present administration and desirable changes in organization; another, the subsidies now given by the federal government to colleges, their present administration, the results they obtain and the policies that should be adopted in the future; the third will study subsidies granted for education of less than college grade, the effectiveness of such grants and possible changes in policy.

Closer Cooperation Between Schools and the Press

Better cooperation between the schools and the press is advocated by Joy Elmer Morgan, editor, *Journal of the National Education Association*, in an editorial.

Mr. Morgan writes: "Do the newspapers in your community appreciate the schools? If they do not, have you done your part to give them an opportunity? Have you and the teachers made it easy for editors to have the facts about the schools? Have you treated reporters as friends and neighbors and fellow teachers, which they really are? The newspapers are rendering a great civic service, not the least important of which is the support of the schools. It would be a fine thing if someone of means would offer a thousand-dollar prize each year for the best newspaper editorial on the schools."

School Accounting as Adapted to Small Districts

This article suggests the main features of a system that has stood the test of practical experience and has proved a satisfactory means of exercising internal administrative control

By PROF. JOHN E. CORBALLY, School of Education, University of Washington

ONE of the problems that confront a superintendent of schools in a small system is that of school accounting. The need for a simple, yet efficient system is more acute if the superintendent does not have clerical help. Whatever method may be used, it should provide an accurate itemized statement of expenditures at any time throughout the school year.

The following system was used by me during the time that I was superintendent at South Bend, Wash. That place was a small community of approximately 3,000 people, and it had about 600 pupils in the public schools of the district. The form used, which is shown here, required little clerical work, yet all of the information desired was complete and easily accessible. This form was printed on loose-leaf sheets, 6 by 9½ inches in size. These, with a loose-leaf binder and indexes comprised the material used.

The form had spaces for the following information.[1]

[1] The numbers in parenthesis refer to the numbers in the form reproduced here.

(1) The school year for which the record is kept.
(2) The classification of expenditures.
(3) Superintendent's order number.
(4) Warrant number.
(5) Date warrant was paid.
(6) Company from which articles were purchased.
(7) List and quantity of items purchased.
(8) Amount expended for grade school.
(9) Amount expended for high school.
(10) Total amount of expenditure.

The items were segregated under six heads, and these were the general headings listed on the form from the office of the state superintendent of public instruction entitled "Classification of Expenditures for Second-Class Districts." These were: expense of general control; expense of instruction; expense of operation; expense of maintenance of school plant; expense of auxiliary agencies; capital outlay.

Each division had a number of subdivisions and each subdivision was given a separate number. In

RECORD OF EXPENDITURES FOR _____ PUBLIC SCHOOLS

From July1, 19___ to June 30, 19___. (1) (2) Subhead _____ Division _____

(3) Order No.	(4) Warrant No.	(5) Date	(6) Purchased From	(7) Items	(8) Grade	(9) High	(10) Totals
				TOTALS			

this particular case the numbers assigned corresponded with those found on County Form No. 97-1915, "Distribution of Expenditures for Second-Class Districts." This particular form is used by each county auditor for keeping a record of the expenditures from the general fund of each school district in the county. The subdivisions listed below are merely suggestive. They show the flexibility of this particular method of segregation:

Not all of the subdivisions listed would be needed by all districts. The item for transportation, for example, might be omitted in some districts. On the other hand, other subdivisions might be needed, and those could be added without increasing the complexity of the system. No separate sheets were kept for salaries of teachers or of janitors, as these items are constant for the school year and the superintendent has this information available on the monthly pay roll sheets.

Expense of General Control	
Clerk's Office Expense	1
Elections and Census	2
Superintendent's Office	7
Other Expense (Phone, publication of notices, diplomas, etc).	9
Expense of Instruction	
Text Books	16
Instructional Supplies	17
Commercial Department	
Freight on Instructional Supplies	
Miscellaneous Supplies, as book covers, ink, paste	
Paper	
Penmanship Supplies	
Primary Supplies	
Teachers' Supplies	
Technical Supplies	18a
Biology	
Chemistry	
Domestic Science	
Manual Training	
Physics	
Other Expenses	18b
Expense of Operation of School Plant	
Fuel	21
Water	22
Light and Power	23
Janitors' Supplies	24
Other Expenses	25
Expense of Maintenance of School Plant	
Repair of Buildings	27a
Upkeep of Buildings	27b
Repair of Equipment	28a
Replacement of Equipment	28b
Insurance	29
Other Expenses	30
Expense of Auxiliary Agencies	
Libraries. Books	33
Libraries. Other Expenses	34
Transportation of Pupils	37
Capital Outlay	
Equipment of Old Buildings	51a
Equipment of Old Grounds	51b

The large number of subdivisions under the general heads of "Instructional Supplies" and "Technical Supplies" make it possible to distribute more easily the various items that are included under the major division entitled "Expense of Instruction." This facilitates the computation of the cost per pupil per day for both the elementary school and the high school. In any district in Washington where there are large numbers of pupils enrolled from non-high-school districts, this is important. The basis for recompensing high-school districts for the education of pupils from non-high-school districts is the cost per pupil per day in the high school furnishing such instruction. Failure to keep an accurate record of high-school costs might deprive a district of money that is rightfully due that district for rendering a certain type of service.

If the school district is at or near the county seat, the superintendent can check his expenditures each month by examining his district's account at the auditor's[1] office. This should not take more than an hour or two one day a month.

How System Operates

The mechanics of the system are simple. When a bill is received for certain items that have been purchased, the number of the classification to which the items belong can be put on the bills as they are O K'd for payment by the superintendent. For example, an invoice for books would be marked 16, while the phone bill would be 9. If an invoice contained a number of different items, the class number could be placed after each one, for example:

2 sets 3x5″ index cards ..	.78	7
2 doz. class record books.	4.90	17 (Teachers')
26 diplomas	16.36	9

At the same time that the superintendent checked over the invoice with his order, he could put his order number on the invoice.

After the bills have been presented to the school board for approval for payment, and the claims have been made out and sent to the county auditor, a record will come back showing the number of the warrant that has been drawn for each sepa-

[1] In some states it would be some other county or town office.

rate invoice. Then each invoice can be posted, and since the classification and order number were listed previously on each invoice, it should take only a little time to post each separate item on its proper page. At the same time, the amount of the invoice that should be charged to grade-school expense is entered in Column 8, entitled "Grade," and the amount chargeable to high-school expense is entered in Column 9. The sum of Columns 8 and 9 should equal the amount that is put in Column 10, or "Total."

Advantages Plan Offers

This presupposes that the superintendent or someone in his office makes out the claims for warrants each month, and submits the claims with their accompanying invoices to the board for approval. If he does not do this, he should be able to show the board that there are merits in the plan, and to obtain permission from the board to give the plan a trial. The claims would be turned over to the board members for their signatures before they are sent to the auditor for payment. The claims contain spaces for the distribution of expenditures between grade schools and high school, and that segregation could be made at the time the claims were being made out.

The particular advantages of keeping a record of expenditures in a loose-leaf form of this type are at least four. In the first place, it shows definitely just what amount has been spent for any or all items of the budget at any particular time. The superintendent will know when he is close to the limit set aside for any one particular purpose, and can be guided in his purchasing by such information. Since each column should be totaled at the end of each month, it is an easy matter to make out a financial statement for the board for each regular monthly meeting. This report would give the following information: classification of expenditure; amount budgeted; amount spent; balance in fund.

In the second place, the superintendent has definite information as to the quantity of specified items purchased during the year, together with the price paid for each item. This is found to be convenient to have at hand when it becomes necessary to make purchases for the following year. It is sometimes more economical to buy such materials as paper, paste, ink, in large amounts, as it is possible to get a better price on a quantity basis or the freight rate might be reduced. The record of purchases for the past year is a guide to future purchases.

In the third place, this system proves valuable in making out the budget for the ensuing school year. By knowing just what amounts were paid for various items during the current year, it becomes easier to justify a request for a similar or larger amount for the following year. The members of the board can be shown just how the money is being spent. An itemized statement for repairs made during the year, with the cost of each repair, would be more acceptable to the board than the mere statement, "Repairs, $750."

A fourth way in which this system is valuable is in checking what are suspected to be duplicate invoices that might be received during the year. I recall two separate instances in one year of this very occurrence, but by referring to the distribution of expenditures it was found that both had been paid. The warrant number and the date when the warrant was drawn were sent to each firm, and they were able to check back and rectify their error.

This system is flexible and can be adapted to the needs of different school districts. It is particularly suited to the needs of the administrator in the smaller school who finds that the amount of time at his disposal for keeping his financial records is not enough to justify anything but the use of a simple but efficient system of accounting.

A Chain of Small Colleges in a Great University Series

Present day colleges are the weakest link in the modern system of higher education, Dr. Bernard I. Bell, warden, St. Stephen's College, Annandale-on-Hudson, N. Y., is quoted as saying in the *Journal of Education.* Doctor Bell advocates a system of small colleges isolated from the rush of cities but linked as parts of an important university group.

Small, intimate, personalized and relatively secluded undergraduate colleges within the university itself, each largely self-governed but all taught by scholars firmly banded to one another and to the research scholars in the common life of the university, would provide sufficient training preparatory to specialization, Doctor Bell believes, and would make possible extended personal contact with the students.

"It is impossible," Doctor Bell says, "to make men in job lots and impossible to make people thoughtful by lecturing at them. Education is not miraculous or mechanical, and personal contacts have always been and must always be basically important. The day of the big classroom college is, or ought to be over."

St. Stephen's is affiliated with Columbia University.

Instruction Costs in Typical Small High Schools—A Study*

Schedule of alternating programs suggested to replace traditional preparatory curriculum for pupils in small schools who do not contemplate continuing their education in college

By J. T. HOOD, Jr., Principal, Wilmington High School, Wilmington, Mass.

IT IS quite evident that pupil-hour costs will increase during each of the four years of the high school as the classes grow smaller. With this in mind Table IV was prepared.

According to Table IV, this tendency of the pupil-hour cost to increase during the four years is marked. Also, the tendency for subjects offered in the same years by the five groups of schools to increase in cost as the schools decrease in size is quite definite. These tendencies are particularly true in the case of Latin, French, mathematics, science, commercial and miscellaneous subjects. Under miscellaneous are included such subjects as Spanish, manual training, cooking, sewing, printing and mechanical drawing, all of which are offered infrequently.

Taking into account the tendencies mentioned in the preceding paragraph, it is to be questioned whether the smaller schools are justified in offering subjects in such slight demand. The reason for these offerings, no doubt, is the insistence by the communities that the high school shall prepare for entrance to the Eastern colleges.

The problem raised here is one of educating the communities to see that there are many good colleges which do not demand a traditional and restricted preparation, and further that there are degrees other than the bachelor of arts which signify just as fully that the recipient is the graduate of a four-year college course and has been exposed to an equivalent amount of so-called "culture." In addition, the recipient of a degree other than the bachelor of arts may be well prepared to meet the problems of life and wrest a living from an apparently critical and reluctant world.

In support of the statement that there are good colleges willing to accept our graduates who have not had the traditional course consisting of four years of Latin, three of French, three or four of mathematics and other required subjects, the following information gleaned from the *Bulletin* of the Newton, Mass., High School is offered.

These colleges will admit students who have had three years of mathematics, two of any language, a year of history and either physics or chemistry, as candidates for the degree designated: Bates, B.S.; Bowdoin, B.S.; Brown, Ph.B., B.S.; Massachusetts Agricultural College, B.S.; Middlebury, B.S.; Skidmore, B.S.; Tufts, B.S.; University of Maine, B.S. and Vermont University, B.S. By increasing the language offering to three years the following colleges may be added to the list: Cornell, B.S.; Dartmouth, A.B., B.S.; Harvard, B.S. and Simmons, B.S.

This information, while it is believed to be accurate, is to be taken neither as a guide in the preparation of pupils for any particular college nor as an exhaustive listing. The information is given here merely as an indication of the possi-

*This is the concluding part of Mr. Hood's article. The first half appeared in the September issue.

TABLE IV—MEDIAN COSTS IN CENTS

	First Year					Second Year				
Group	*I*	*II*	*III*	*IV*	*V*	*I*	*II*	*III*	*IV*	*V*
English	4.7	3.7	5.0	5.5	7.9	5.2	5.0	5.8	7.4	9.0
Latin	5.6	8.1	3.9	10.2	18.5	5.7	9.9	15.6	20.1	21.7
French	5.4	...	4.4	...	....	5.9	4.8	6.7	6.2	10.7
Mathematics .	4.8	5.9	7.9	8.4	12.9	5.1	8.7	13.4	17.4	25.0
Science	3.8	6.3	5.6	5.5	10.8	4.2	7.8	6.8	7.0	12.6
History	3.8	5.0	4.2	4.7	7.5	4.3	6.8	4.8	6.3	9.6
Commercial ..	4.7	3.5	5.0	5.4	12.7	6.0	5.5	7.7	11.2	16.2
Musical	6.3	17.6	16.7	15.5	....	7.6	11.7	22.4	15.5	25.0

bility of devising a program of studies that will simplify the offerings and still prepare pupils to continue their education in a college.

The costs given in Table V were found in the following manner: All English classes reported in all of the schools were arranged in order and the cost of the middle class in this arrangement

TABLE V—MEDIAN COSTS IN CENTS BY DEPARTMENTS

English	7.1
Latin	15.6
French	9.8
Mathematics	12.9
Science	10.8
History	5.5
Commercial	10.3
Miscellaneous	15.5

placed in the table. The same procedure was followed for the other departments.

One interesting fact is brought out in this phase of the study. One would naturally expect to find the median cost for English to be the lowest of all departments, since every pupil must take English each year. This, however, is not true in this study. We find that history, with a median cost of 5.5 cents, is below the median cost of English, which falls at 7.1 cents. A positive explanation of this apparent discrepancy cannot be offered but the following solution is suggested: Practically all freshmen and seniors are required to take a history course and, in addition, one or more courses are open to sophomores and juniors. In these latter courses, both sophomores and juniors are admitted to the same course, thus tending to keep the enrollment up to or in excess of actual sophomore or junior enrollment. That is, a school may offer early European history one year to both sophomores and juniors; the next year modern European history will be offered to both sophomores and juniors. Thus the registration for the three history courses may be in excess of registration in any three classes of English in the school.

Latin and miscellaneous subjects show the highest costs. This is due of course to small enrollments. The smaller the school is the fewer are the pupils who register for these subjects. This makes it impossible to maintain a class size at, or anywhere near the size of classes in English or history.

In Kimball's study, the arrangement is somewhat different. His study ranks the departments in the following order: English, commercial, history, science, mathematics, foreign languages and miscellaneous.

The median cost of all of the subjects in all of the schools was found to be 8.3 cents. This agrees fairly well with the state median of 7.6 cents reported by Kimball. Kimball had reports from every school in the state, and some of them enrolled more than 650 pupils. Thus the low costs in the larger schools would more than offset the higher costs in the smaller schools. This would also help to account for the different ranking of the departments in his study. A large school is able to schedule one or more large classes in some of the subjects that are not in universal demand, while the small school is unable to escape the small registration, if offered at all.

Keeping in mind that the median cost for all subjects is 8.3 cents, we may well question the wisdom of teaching foreign languages in the

TABLE VI—MEDIAN COSTS IN CENTS FOR TEACHING FOREIGN LANGUAGES IN EACH GROUP OF SCHOOLS

Subject	*Group*	*I*	*II*	*III*	*IV*	*V*
First-year Latin	...	5.6	8.1	3.9	10.2	18.5
Second-year Latin	.	5.7	9.9	15.6	20.1	21.7
Third-year Latin	...	11.3	13.3	22.2	20.0	20.0
Fourth-year Latin	..	11.3	14.0	20.8	22.7	26.2
First-year French	..	5.4	...	4.4	...	....
Second-year French	.	5.9	4.8	6.7	6.2	10.7
Third-year French	.	6.0	7.8	7.8	11.2	16.7
Fourth-year French	.	10.5	9.5	18.0	20.2	29.2
First-year Spanish	.	....	...	5.4	8.9	....
Second-year Spanish	....	...	7.7	10.2	....	

FOR TEACHING BY DEPARTMENTS

Third Year					*Fourth Year*					
I	*II*	*III*	*IV*	*V*	*I*	*II*	*III*	*IV*	*V*	*Group*
4.1	6.6	5.4	7.3	8.3	5.4	6.2	6.7	6.9	8.3	English
11.3	13.3	22.2	20.0	20.0	11.3	14.0	20.1	22.7	26.1	Latin
6.0	7.8	7.8	11.2	16.7	10.5	9.5	18.1	20.2	29.1	French
7.6	11.6	13.0	19.1	24.7	13.1	11.4	14.1	26.0	58.3	Mathematics
8.7	11.1	15.8	19.1	22.0	10.7	11.1	15.4	19.1	22.9	Science
3.8	7.6	5.2	5.9	11.5	5.0	6.8	6.6	6.0	11.9	History
9.5	9.1	8.6	14.6	23.8	11.5	15.3	16.7	19.4	21.5	Commercial
9.1	30.9	12.1	25.3	25.0	5.7	39.6	12.1	25.3	22.1	Musical

TABLE VII—SCHEDULE BASED ON AN ALTERNATING PROGRAM 1928-1929; 1930-1931, ETC.

Period	*Teacher A (Prin.)*	*Teacher B*	*Teacher C*
1		Gen. Math. (1, 2)	Mod. European History (3, 4)
2		Algebra (3, 4)	Civics (1, 2)
3	Physics (3, 4)	English 1 (1, 2)	Bookkeeping I and II (3, 4)
4	Lab. 2 days (3, 4)		
5		Latin I (2, 3)	Typewriting I and II (1, 2)
6	Gen. Sc. (1, 2)	English III (3, 4)	
7	Agric. I and II (1, 2)		Sewing I and II (1, 2)

upper years, especially in the smaller schools. Latin can probably be carried through the four years of the larger schools without undue expense. This is also true of French. The cost of the third and fourth years of Latin begins to be expensive in Group III and it is to be questioned as to whether or not the schools in Groups III, IV and V are justified in offering this subject. Many of these schools attempt to keep the cost down by combining third and fourth years of Latin and offering Virgil one year to both juniors and seniors, and Cicero the next, but in spite of this the costs mount. A third year of French begins to be expensive in Group III and continues to increase in Groups IV and V. Spanish does not require much consideration for it is offered by only one school in Group III and one in Group IV. In view of these high costs, if for no other reason, it might be well for schools in Groups III, IV and V to offer but one language and in the case of Groups IV and V but three years or possibly two years of that language.

The problem of instruction costs has received some attention in the past and educators have tried to reduce the number of small classes in certain subjects by allowing pupils of two or more grades to elect these subjects. In the very small schools, even when this device has been resorted to, it has been impossible to offer some subjects. It is found, however, that the traditional college preparatory subjects have been retained and this has resulted in the many small classes that have been noted in this study.

As a result of this study I hope I may be able to suggest a satisfactory curriculum for the small high school. In proposing this curriculum I have in mind a high school that enrolls from 40 to 50 pupils and employs 3 teachers.

From an analysis of the 10 high schools in Group V reporting in this study, it was found that the median-sized school enrolled 39 pupils and employed 3 teachers. Therefore, this typical-sized school was selected as the one for which a four-year curriculum should be proposed. The suggestion of adopting an alternating program, as advocated by certain educators, was followed. The schedules presented in Tables VII and VIII are the result of this suggestion.

From Tables VII and VIII, it will be noted that the principal is required to teach only three subjects each year. This will leave him sufficient time for some supervision of the instruction in his building. The two years of work in agriculture are carried on at the same time in the same class. This should be possible, inasmuch as the course in mind would consist largely of individual projects. The same is true of the courses in sewing, typewriting and bookkeeping.

Let us analyze these proposed schedules and note the possibilities of election in each of the four high-school grades for each year. Every effort has been made to enrich the work of the ninth and tenth grades, since the heaviest mortality occurs during these two years, and the survivors are a highly selected group for whom a somewhat more restricted offering may be reasonably adequate.

I am perfectly willing to admit that there may be weaknesses in the curricular offerings presented in Tables IX and X. Nevertheless, I do feel that such offerings are an improvement over many in actual use. Especial attention is called

TABLE VIII—SCHEDULE BASED ON AN ALTERNATING PROGRAM 1929-1930; 1931-1932, ETC.

Period	*Teacher A (Prin.)*	*Teacher B*	*Teacher C*
1			U. S. History (3, 4)
2		Geom. (3, 4)	Early European History (1, 2)
3	Chemistry (3, 4)	English II (1, 2)	Bookkeeping II and I (3, 4)
4	Lab. 2 days (3, 4)		
5		Latin II (3, 4)	Type. II and I (1, 2)
6	Biology (1, 2)	English IV (3, 4)	
7	Agric. II and 1 (1, 2)		Sewing II and I (1, 2)

TABLE IX—ELECTIVE OFFERINGS ON AN ALTERNATING PROGRAM, 1928-1929; 1930-1931, ETC.*

Grade 9	*Grade 10*	*Grade 11*	*Grade 12*
English I	English I	English III	English III
Civics	Civics	Mod. Eur. Hist.	Mod. Eur. Hist.
Gen. Math.	Gen. Math.	Algebra	Algebra
Gen. Science	Gen. Science	Physics	Physics
	Latin I	Latin I	
Agric. I	Agric. II	B'k'g I	B'k'g II
Sewing I	Sewing II		
Type. I	Type. II		

*Subjects listed above the break in the table are acceptable for entrance by many colleges.

to the enriched offerings for the ninth and tenth grades. Opportunity must be provided in a three-teacher school for the few who will desire to continue their education beyond the secondary school. This has been provided for. However, it must be borne in mind that the curriculum here provided will not prepare for certain exclusive institutions of higher learning. For those pupils who are determined to enter such institutions there are two roads open: first, to complete two years of work in the smaller school and then to transfer to some nearby larger high school which offers the necessary preparation; second, to complete four years of work in the smaller school and then to enroll in a good preparatory school for one or two years of intensive work.

Let us now compare this proposed program of studies with those offered by the smallest, the median-sized school and the school immediately below the median, included in Group V of this study. This group includes those schools that enroll from 1 to 50 pupils.

I should like to call attention to some interesting facts that are brought out in Table XI. The proposed school offers but two years of Latin while the three schools now in operation offer four years in this field. Two years of Latin undoubtedly will meet the needs of practically all the pupils who may attend this small rural high school; at any rate, it is sufficient to admit them to a college. When the third and fourth years of Latin are offered in a school of this size it inevitably results in another small class and the possible elimination of a subject that will prob-

TABLE X—ELECTIVE OFFERINGS ON AN ALTERNATING PROGRAM, 1929-1930; 1931-1932, ETC.*

Grade 9	*Grade 10*	*Grade 11*	*Grade 12*
English II	English II	English IV	English IV
Early Eur. Hist.	Early Eur. Hist.	U. S. Hist.	U. S. Hist.
Biology	Biology	Chemistry	Chemistry
		Geom.	Geom.
		Latin II	Latin II
Agric. I	Agric. II	B'k'g I	B'k'g II
Sewing I	Sewing II		
Type. I	Type. II		

*Subjects listed above the break in the table are acceptable for entrance by many colleges.

TABLE XI—COMPARISON OF PROGRAMS OF STUDIES

Proposed	*Median*	*Just Below Median*	*Smallest*
3 teachers	3 teachers	3½ teachers	3 teachers
40 pupils (approximate)	40 pupils	39 pupils	28 pupils
	Subjects Offered		
Eng. 1, 2, 3, 4	Eng. 1, 2, 3, 4	Eng. 1, 2, 3, 4	Eng. 1, 2, 3, 4
Latin 1, 2	Lat. 1, 2, 3, 4	Lat. 1, 2, 3, 4	Lat. 1, 2, 3, 4
.....	French 1, 2, 3	French 1, 2, 3	French 1, 2, 3
Gen. Math.	.....	.....	.....
Algebra	Algebra	Algebra	Algebra
Plane Geom.	Plane Geom.	Plane Geom.	Plane Geom.
.....	.....	Rev. Math.	Rev. Math.
Gen. Science	.....	.....	Gen. Science
Biology	Biology	.....	Biology
Physics	Physics	Physics	Physics
Chem.	Chem.	Chem.	Chem.
Civics	.....	Civics	.....
Ear. Eur. Hist.	Anc. Hist.	Anc. Hist.	Anc. Hist.
Mod. Eur. Hist.	Mod. Hist.	Eur. Hist.	Eur. Hist.
U. S. Hist.	U. S. Hist.	U. S. Hist.	U. S. Hist.
Bookk'p'g I & II	.....	Bookkeeping	.....
Type. I and II	.....	Type.	.....
.....	.....	Stenog.	.....
Sewing I and II	.....	Sewing	.....
.....	.....	Cooking	.....
Agric. I and II	.....	.....	.....

ably appeal to a great number of pupils. For similar reasons no work in French has been suggested.

A course in general mathematics has been introduced and this, together with algebra and geometry, will meet the requirement of the two and a half years of mathematics set up by many colleges. This obviates the necessity of offering a course in review mathematics. Many first-year pupils do not elect algebra, and perhaps they are wise not to do so, but I believe that practically all of them could be persuaded to take the course in general mathematics.

Four years of work are suggested in the fields of science and the social studies. This is not true of any of the three schools listed in this study. Finally, courses are offered in the fundamentals of typewriting, bookkeeping, practical sewing and scientific agriculture. The three schools, whose offerings are shown in this study, have no course in agriculture, and two of them offer no work in typewriting, bookkeeping or sewing.

One other device to enable the small school to increase its curricular offerings without depriving most pupils of their rights is the use of correspondence courses. I know of one high school where this device is in operation. Thirty-three boys and girls are enrolled in four courses: interior decoration; household management; gasoline automobiles and mechanical drawing.

Correspondence Courses Used

Under the plan operating in this school, the school program is so arranged that the work of the course is done by the pupils during regularly scheduled daily periods. A teacher supervises the work. The average time spent by a pupil on each lesson is at least six hours. The lessons are completed within an assigned time so that all the papers may be mailed in bulk. Lesson reports are sent to the correspondence school by the school authorities and not by individual pupils. These lesson reports are then corrected and graded by the correspondence school. Certificates are awarded to those satisfactorily completing courses.

Lesson material which may be used repeatedly by different groups of pupils is provided at cost and, in most courses, a flat rate per lesson-report is made for correction, grading and certification.

The expense to a school department for a wide variety of courses is much less than the salary of one teacher. Aside from its low cost, this plan has the advantage of training the pupil in self-reliant study and of establishing a healthy reaction to regular school work. School credit is allowed for all courses completed.

The facts presented in this study will, I believe, bear out my contention that the proposed program of studies will come nearer to meeting the needs of the pupils enrolled in the small high school than the programs now in effect. The three programs now in use tend to follow the traditional college preparatory curriculum to the detriment of the interests of pupils not contemplating college entrance.

Controlling Extra-Curricular Activities in the High School

How to control the social, athletic and other extra-curricular activities of the high schools of a city is one of the many problems confronting city school officials, according to W. S. Deffenbaugh, city school specialist, Bureau of Education, in the *United States Daily.*

Mr. Deffenbaugh continues: "Such activities cannot and should not be ignored. One of the hopeful signs in secondary education is that numerous activities assisting in the development of the intellectual, physical and social needs of the pupils are being introduced into the high schools of the country. It is true that some persons still hold to the idea that children go to school almost solely to study from books and that the extra-curricular activities dissipate the energies of pupils and should not be tolerated. These activities, however, have found their way into the high schools and will remain there.

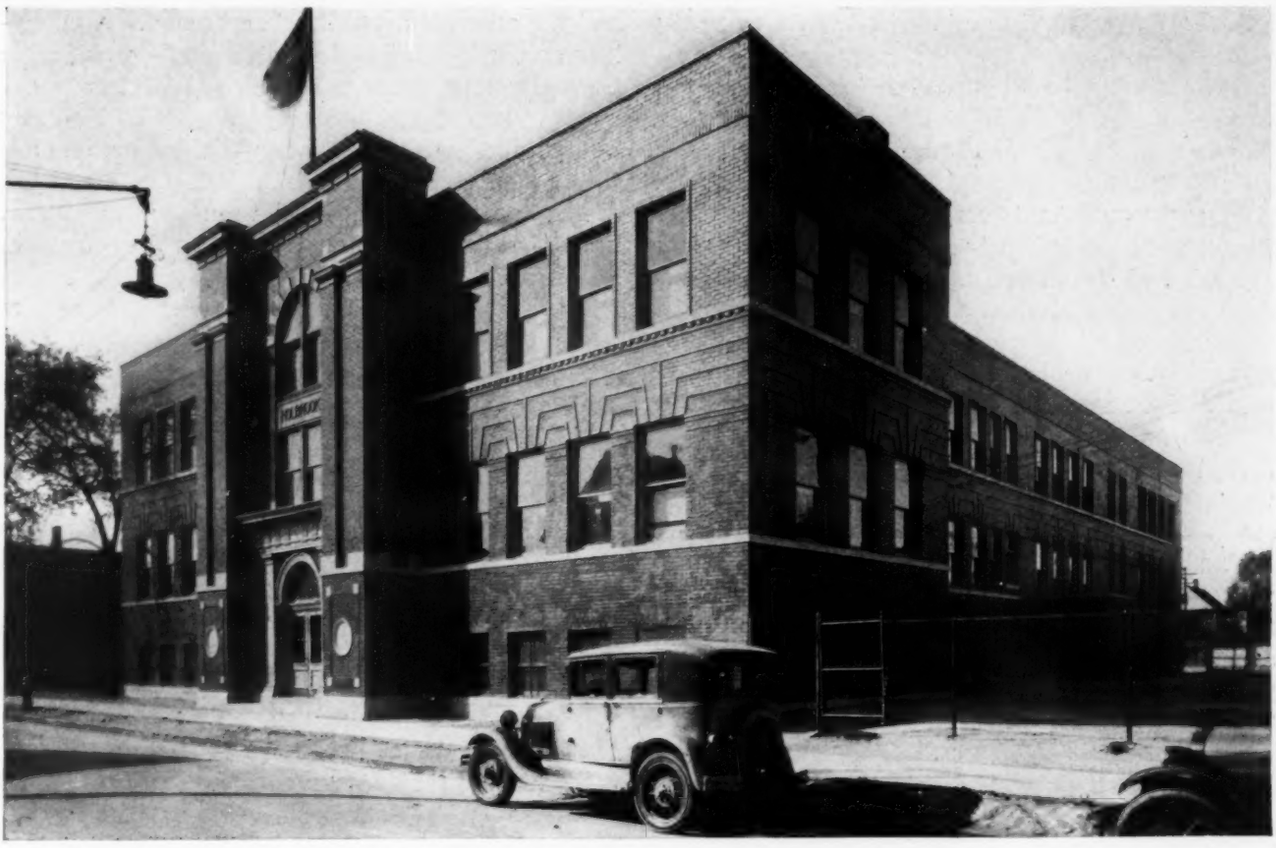
"High-school principals are gradually coming to realize the fact that their pupils must have a certain amount of social life and are attempting to provide wholesome, social activities in the school building to take the place of the downtown dance hall and the high-school fraternity.

Social Life Must Be Recognized

"The social life of high-school pupils cannot be ignored. It must be recognized and directed.

"An extra-curricular activity that has had its share of discussion by boards of education, high-school principals and teachers is athletics. No doubt many of the criticisms directed against athletics in the high school are warranted; but athletics are in the schools to stay and are becoming more and more popular each year. The problem of athletic activities is being solved by making them a part of the general scheme of physical education.

"Besides the social and athletic activities of the high schools there are organizations and clubs that play an important part in the all-round development of pupils."



An example of successful remodeling is the Holbrook Elementary School, Hamtramck, Mich., which was built in 1897 and modernized in 1928.

When Remodeling Is Profitable

A practical problem in elementary educational designing as it was worked out under field conditions in a public school system

By ARTHUR B. MOEHLMAN, Professor of Administration and Supervision, University of Michigan

THE problem often confronting boards of education and superintendents is when to tear down an old building and when to remodel. Many factors are involved in the answer to this apparently simple question.

The major considerations are (1) the instructional policies of the board of education; (2) the character of the physical plant; (3) spacing standards; (4) the location of the school plant; (5) the adequacy of the school site; (6) present use; (7) possible future educational demands; (8) the possibility of additions and remodeling and (9) the time of replacement. Many of these factors are quite involved and cannot be adequately considered here on account of space limitations.[1] Instead a specific problem of remodeling recently completed will be presented in detail to illustrate the technique under certain conditions.

In the Fall of 1928 the board of education in Hamtramck, Mich., was confronted with the problem of replacing the Holbrook Elementary School. This building, erected in 1897 and added to in 1905 and 1913, served the southwest section of the city. In the general school plant program,[1] developed in 1926, the Holbrook school had been scored as poor upon thirteen out of fifteen significant items.[2] Its location was rated as good and its height as fair. Within half a mile of heavy railroad transportation, and with the tendency of industry to encroach further upon its district, the area served was classified as a "slowly dying district."[3] Under existing conditions

[1] For full discussion of this problem see "Public School Plant Program," by Arthur B. Moehlman, Chapter IV, Rand McNally & Co., Chicago.

[1] See "Housing the Children, a Community Project" by Arthur B. Moehlman and M. R. Keyworth, Research Series I, 1926, Board of Education, Hamtramck, Michigan.

[2] Ibid, p. 64.

[3] For detailed explanation see "Public School Plant Program," Chapter IV and pp. 288-95.

the need for a building might be twenty to thirty years.

The building itself was of brick construction, basement and two stories in height, fortunately built as an "I" plan. Interior construction was all of wood, an extreme fire hazard. Inadequate, poorly planned and very odorous mass toilet rooms were located in the basement. Two poorly lighted and ventilated rooms furnished the indoor recreation facilities. Heating, storage and a basement kindergarten, two-thirds under ground with typical basement windows, comprised the basement facilities. Heat ducts were carried so low that custodial operatives were forced to sweep with head constantly bent forward. A man above average height could not stand upright.

The basement, due to inadequate waterproofing, was constantly damp and upon occasions of heavy rain was actually flooded. On the first floor was another kindergarten and seven classrooms with good natural but poor artificial lighting. There were eight similar classrooms upon the second floor. Extra large stair landings on the second floor had been partitioned off, one as a library and the other as a teachers' rest room. A cubbyhole on the landing between second floor and attic served as the principal's office. Children hung their wraps upon closely spaced hooks in dimly lighted and poorly ventilated cloakrooms, one adjacent to each classroom.

The basement corridor was too low for general use; the first floor corridor was irregular in shape, and all three, because of wood construction were extremely difficult to keep clean. The first general survey (1926) condemned the building making necessary immediate abandonment.

Despite these conditions it was not possible, for financial reasons, to consider this problem seriously until the Fall of 1928 or slightly more than two years after the adoption of the general school plant program. In the meantime population changes in this area were carefully studied and the findings of the original survey modified to meet changed conditions. Industrial and housing changes were taking place more rapidly than had been anticipated and the modified requirements for housing facilities in this area were now set at not more than twenty-five years.

The board of education was then confronted

ELEMENTARY WEEKLY TIME SCHEDULE
(IN MINUTES)

	Kgn	*1B*	*1A*	*2B*	*2A*	*3B*	*3A*	*4B*	*4A*	*5B*	*5A*	*6B*	*6A*
Health													
Gym. and Hygiene	140	140	140	140	140	140	140	140	140	140	140	140	140
Play	140	140	140	140	112	112	56	56	56	56	56	56	56
Recess	56	56	56	56	56	56	56	56	56	56	56	56	56
TOTAL	336	336	336	336	308	308	252	252	252	252	252	252	
Language													
Reading and Phonics	784	672	644	644	420	420	420	420	308	308	308	308	
English	0	0	0	0	0	0	0	0	112	112	112	112	
Spelling	0	56	84	84	112	112	112	112	112	112	112	112	
Penmanship	0	56	56	56	112	112	112	112	112	112	112	112	
Library	56	56	56	56	56	56	56	56	56	56	56	56	
TOTAL	840	840	840	840	700	700	700	700	700	700	700	700	
Social Study													
Auditorium	140	140	140	140	140	140	140	140	140	140	140	140	
Nature Study	112	112	112	112	0	0	0	0	0	0	0	0	
Science	0	0	0	0	112	112	140	140	140	140	140	140	
TOTAL	252	252	252	252	252	252	280	280	280	280	280	280	
Exact Science													
Arithmetic	0	0	0	0	140	140	140	140	140	140	140	140	
TOTAL	0	0	0	0	140	140	140	140	140	140	140	140	
Fine Arts													
Literature	140	140	140	140	140	140	140	140	140	140	140	140	
Music	56	56	56	56	56	56	84	84	84	84	84	84	
Art, Industrial	56	56	56	56	84	84	84	84	84	84	84	84	
TOTAL	252	252	252	252	280	280	308	308	308	308	308	308	
Grand Totals	1680	1680	1680	1680	1680	1680	1680	1680	1680	1680	1680	1680	

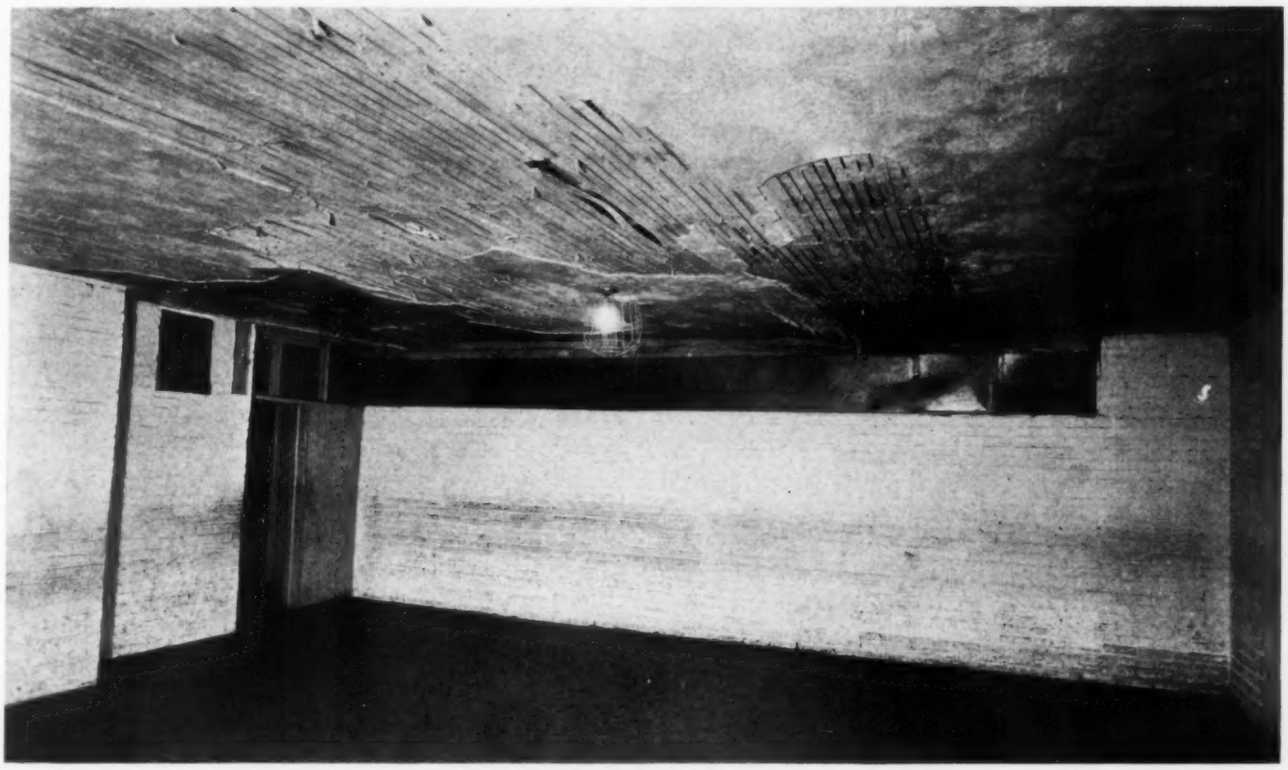
Kindergarten, Holbrook School Hamtramck Michigan

Library, Holbrook School Hamtramck Michigan

Printed by Hamtramck Public School Print Shop

Contrast this remodeled playroom, spacious and light, with the original playroom shown below.

by the question raised at the beginning of this article. Should the Holbrook building be razed and replaced by another or would a complete remodeling of the structure be feasible? The physical conditions have been described. They were worse than are usually found under these circumstances. The building was a menace to health and to life. It was inadequate instructionally. On the other hand there was the problem of the slowly dying district. Would it be good judgment to erect a new building (estimated construction cost, not including site, $350,000) that would be used



not more than twenty-five years or should an attempt be made to develop facilities to cover the shorter expectancy of use?

The superintendent, an educational consultant, an architect and a practical builder studied the problems in their respective fields. Educationally, the "I" plan was easy to remodel. The outside dimensions of the building were such that it would be relatively easy to change the inside design to meet existing instructional demands. The architect and builder after exhaustive examination and tests found footings and outside walls in excellent condition. The results of their examination resulted in a recommendation to remodel, at an estimated expense of approximately $140,598 which would include remodeling, architect's fees, educational planning, inspection and equipment, thereby making a saving of $209,402 over a new building, not taking the site into consideration. If a new building were to be built it would be necessary to secure additional land, the estimated cost of which was $182,000. Against this could be placed a credit for the old site of approximately $32,000 making the net additional expense $150,000. Therefore taking everything into consideration, the actual saving by remodeling would be $359,402. The reports of the educational specialist, the architect and the builder were laid before Supt. M. R. Keyworth who presented both plans to the board which ordered him to proceed.

Superintendent Keyworth requested the educational specialist to prepare an educational plan for approximately 800 children, to be operated upon the duplicate plan of administration, in accordance with the adopted policies [1] of the board and in terms of the accompanying time schedule.

The old building had narrow halls leading to the classrooms.

In addition, the requirements were that space for a complete school and community health and social program be included. The architect stated that all of the space between the outside walls would be available and that the building could be completely remodeled on the inside, care to be taken not to disturb existing fenestration.

The first problem in redesigning this plant was to secure the maximum flexibility to meet unforseen possible future requirements. In the old building the heating ducts had all been carried in the side walls, near the cloakrooms, resulting in a rigid interior incapable of easy change in the size of units. By reducing the corridors to a uniform width of twelve feet it was possible to plan a breather wall upon both sides to carry heat ducts and other equipment. This made possible planning in terms of fifteen-foot units, making due allowances for existing fenestration. In addition, the corridor side of the breather wall furnished excellent space for individual hall lockers

[1] See "Public School Code of Hamtramck," part II, Chapter VI.

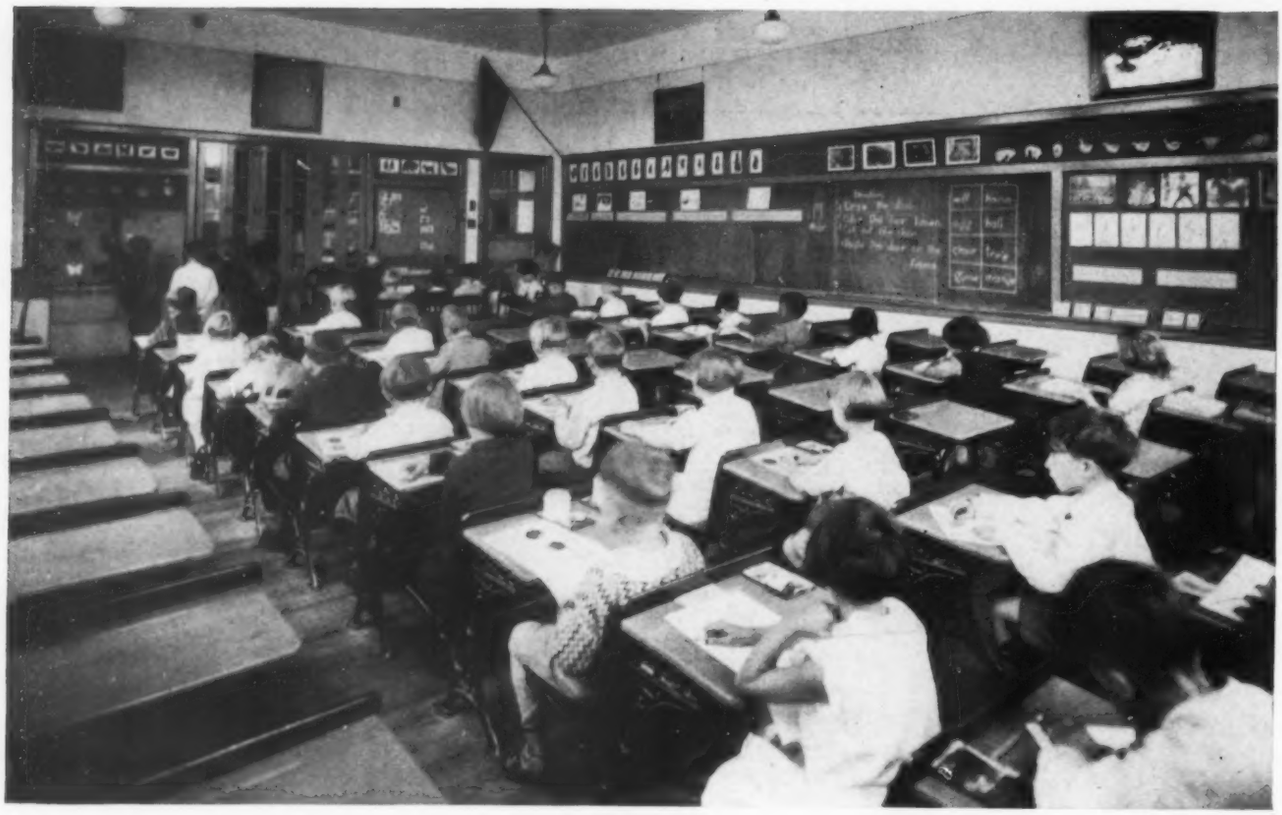
and, on the classroom side sufficient space to meet built-in equipment needs. With respect to the use of hall lockers over cloakrooms or wardrobes there is little in favor of the latter two methods. The use of lockers in the breather wall promotes internal flexibility in construction. Individual lockers are more sanitary and with their use there is no indiscriminate mixing of different garments. They can be administered as easily in an elementary school as wardrobes or cloakrooms. They are much more sightly and permit the use of space inside the classroom for more important purposes. They are essential to any form of the transitional organization of elementary schools.

The capacity of the old building including a scarcely usable basement kindergarten was 900. With this room eliminated, it was only 810. The second problem was to secure the new capacity, conforming to the instructional program, and the administrative policies of the board of education without enlarging the existing shell. This required what is technically known as a sixteen-section school. In terms of the duplicate form of administration, eight home rooms were essential. Specialized needs included gymnasium and auditorium, clinic, library and literature, one music room, one art room and one science room. The total capacity of this organization from grades one to six, inclusive, was 720. A kindergarten, operated upon the two-session plan, added ninety more, making a total working capacity for 810, which was equal to that of the old building, exclusive of the poorly lighted and ventilated basement kindergarten.

To secure all extra facilities not included in the old plant and still furnish the required capacity at first seemed difficult. Filling in of an entry way and the use of the space formerly occupied by the ash pit offered a little extra space. Elimination of cloakrooms made it possible to place two toilets upon each floor without cutting down the number of rooms. Use of what was formerly unused space in the basement also helped. After careful study and the redrawing of the educational layout three times to attain the best space adjustments, a plan was evolved that provided eight home rooms and a library on the second floor; one music, one art and one science room, a kindergarten, administrative quarters on the first floor and a two-storied auditorium and gymnasium starting in the basement. This last was not ideal but it was necessary under existing conditions. The relation between the facilities in the old and in the remodeled plan are shown in the accompanying tabulation on page 50.

The new Holbrook School has wide corridors and excellent space for individual hall lockers.

The heating plant was shifted from the west to the east side of the building. Provision was also made upon the east side for boys' and girls' shower rooms, toilets, a small kitchen and a large janitor's room. The area on the west side between the old kindergarten and the ash room was filled in. The auditorium was placed on the



The new and the old at Holbrook. This modern classroom with its high ceilings, its generous blackboard space and its comfortably placed desks could only with difficulty be associated with the room below. Yet it is the same room.

northwest end and the gymnasium on the southwest side. A school and community clinic and waiting room, an office for the physical director and gymnasium storage were located upon the extreme southwest corner. One of the requirements was for radio installation in every room to make possible participation in important broadcasting. A central radio control room was therefore provided between the auditorium and the gymnasium. To meet the need for groups of children participating in pageants and other large auditorium activities during public presentation a passage was allowed between the auditorium stage and the gymnasium. This eliminated the need for extra dressing and meeting rooms which would be used only upon special occasions.

The new kindergarten was placed in the southeast corner of the first floor, bilaterally lighted. A fireplace, ornamented with nursery tiles, was made the architectural feature of the west wall. A drinking fountain in cool green tile was featured on the north wall. Individual lockers, without doors, were provided for wraps in a room adjacent to the kindergarten. Sanitary facilities and large supply and equipment storage were also included. The administrative quarters were placed next to the kindergarten, making them quickly available to the parents from the main entrance. A waiting room, storage, a vault, an assistant principal's office, a principal's office and a private toilet were included in this suite.

The music room was placed next to the administrative suite. This room was insulated carefully to deaden sound by using acoustical material upon the ceiling and by treating the plaster walls. In addition to the regular built-in wall equipment a fairly large cabinet was added for the storage of musical instruments, which are provided free to all children participating in the elementary orchestras.

Inadequate library facilities, illustrated by this picture, have been supplanted by a well lighted library, the central feature of which is a large fireplace.

The art room has north and east light and is slightly longer than the other rooms on this floor. Built-in breather wall equipment includes a three-section zinc lined model display cabinet, a book case, a sink, a gas electric plate and a built-in ironing board. In the front of the room are a series of cabinets for the storage of paper, child projects and the lumber used in small construction activities. The room is equipped with tables and chairs and with a woodwork bench.

The auditorium and the gymnasium extend throughout the first floor. The space over the

RELATION BETWEEN FACILITIES IN OLD BUILDING AND IN REMODELED PLAN

		Old Plan			*New Plan*		
Floor	*Type of Room*	*No.*	*Size*	*Working Capacity*	*No.*	*Size*	*Working Capacity*
B	Auditorium	none			1	30′x52′	90
B	Gymnasium	none			1	30′x52′	90
B	Clinic	none			1	14′x32′	
B	Girls' Showers	none			1	15′x25′	
B	Boys' Showers	none			1	18′x22′	
B	Kitchenette	none			1	8′x16′	
B	Radio Room	none			1	14′x18′	
1	Kindergarten	2[a]	24′x36′	180	1	24′x32′	90
1	Kdg. Lockers	none			1	9′x24′	
1	Music Room	none			1	24′x30′	45
1	Art Room	none			1	24′x33′	45
1	Science Room	none			1	23′x30′	45
1	Conservatory	none			1	23′x 8′	
1	Cloakrooms	8	7′x18′[b]		None	Hall lockers	
1	Teachers' Rest Room	1	12′x16′		1	14′x31′	
1	Principal's Suite	1	12′x12′		1	24′x32′	
1	Classrooms	6	24′x32′	270	None		
1	Classrooms	2	24′x35′	90	None		
2	Classrooms	6	24′x32′	270	2	24′x32′	90
2	Classrooms	none			3	22′x32′	135
2	Classrooms	2	24′x35′	90	None		
2	Classrooms	none			3	30′x29′	135
2	Library	1	12′x12′		1	32′x30′	45
2	Cloakrooms	8	9′x18′[b]		None	Hall lockers	
B	Boys' Toilet	1	15′x24′		1	8′x 8′	
B	Girls' Toilet	1	15′x24′		1	4′x 6′	
1	Girls' Toilet	none			1	12′x12′	
1	Boys' Toilet	none			1	12′x12′	
2	Girls' Toilet	none			1	12′x12′	
2	Boys' Toilet	none			1	12′x12′	
	Working Capacity			900			810

[a] One a damp, poorly lighted basement room.
[b] Approximate or average size.

radio control room was designed as a teachers' rest room and is equipped with comfortable non-institutional furniture.

The science room was placed at the southwest corner. One end was designed as a conservatory, with aquaria and cages for the inevitable rabbits, guinea pigs, frogs and garden snakes. Built-in cabinets for books, materials' display and maps occupy the north wall. In addition a special supply room was provided for extra large materials' storage.

Second Floor Is Spacious

The second floor contains eight home rooms. Three rooms on the west side of the building are thirty feet wide. This was necessary because of the shell dimensions of the building. To provide adequate natural lighting, transoms were provided in each of these units. The other home rooms are as close to the standard size as possible, considering the width of the building. A library, with a forty-five working capacity, was placed in the northeast corner and is bilaterally lighted. On the corridor wall are built-in bookcases and a fireplace. The entire south wall is also covered with bookshelves. As the need arises other bookcases can be added under the windows on the north side.

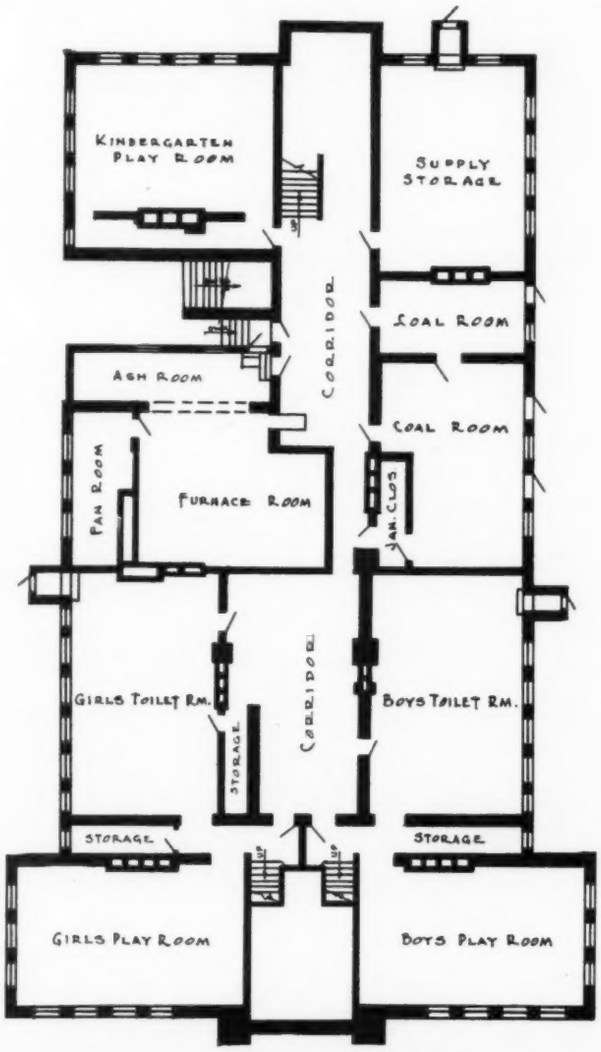
The mass toilet rooms in the basement have been replaced by small sanitaries centrally located upon each floor. No child is required to walk more than seventy feet to reach a toilet. Drinking fountains are also centrally placed in each corridor. Toilet stalls for girls are of marble without doors and in the boys' rooms stall partitions have been omitted entirely for sanitary and administrative reasons. In the old building the air for ventilation was taken from the dusty playground at grade level. Much dirt was carried into the building in this way. Paper, dead leaves and other light refuse were carried against the screen by the air currents and constantly held there. In remodeling, the air intake was transferred to the roof.

A serious attempt was made in interior decoration to develop a plan whereby the institutional atmosphere so evident in most school buildings could be eliminated. A color specialist was employed and experimentation made with a series of different combinations. The traditional golden oak and mahogany red were entirely eliminated. Instead, soft shades of gray, blue, green and yellow were used in different combinations. How well this experimental attempt succeeded may be seen in the accompanying color plates of the library and kindergarten. When the building is finally completed window draperies of light translucent material, in warm shades, will be placed over all windows. This will relieve the bareness of window frames when used only with shades. The objection that the use of draperies is insanitary may be overcome by providing for their frequent cleaning. The cozy, homelike effect gained more than outweighs the objections.

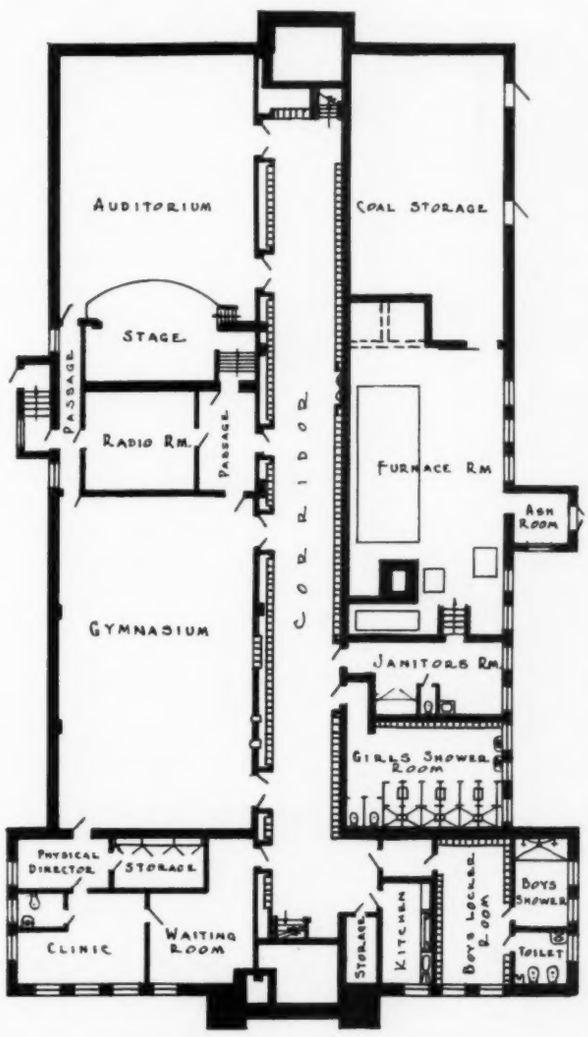
Architectural Problems Met in a Reconstruction Project

By B. C. WETZEL, B. C. Wetzel & Co., Architects, Detroit

THE function of the architect in school planning is to design and supervise the construction of the building. The development of the school plant as an educational unit can best be accomplished by a specialist in the field of educational planning, working in close cooperation with the architect.



The basement plan of the old Holbrook School.



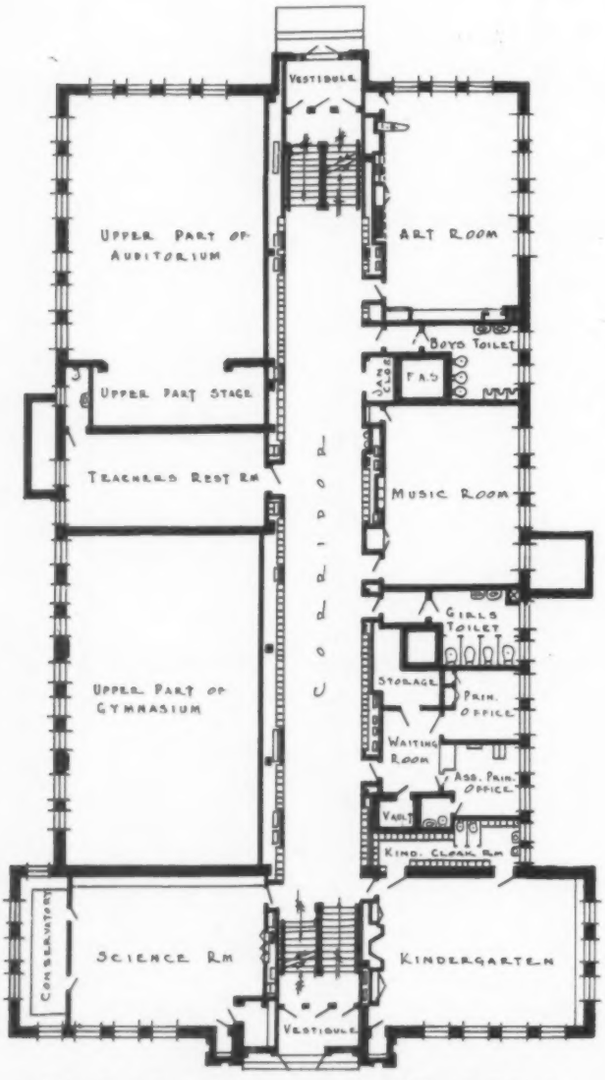
How the basement was changed.

Educational designing and architecture are two complementary phases of the problem, each requiring a specialist. This is particularly true in

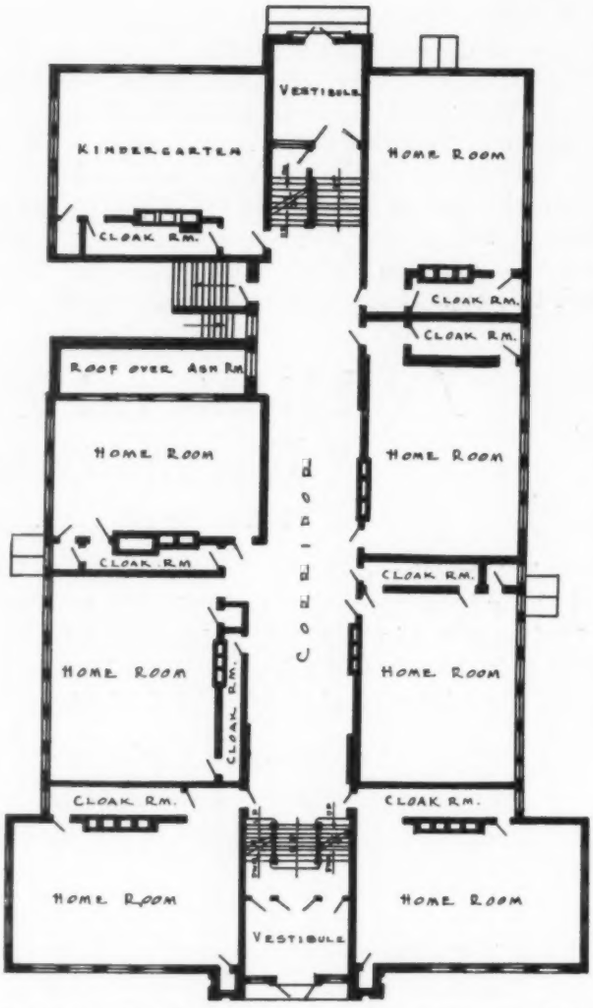
remodeling. Here a generalized plan, found practical and feasible for new development, cannot be used. The plan must usually be altered to fit the existing shell area, unless the community does not desire to take advantage of economy in remodeling.

In developing the new Holbrook School, Hamtramck, Mich., the architects worked in conjunction with Prof. Arthur B. Moehlman, School of Education, University of Michigan, who did the educational designing and with Supt. M. R. Keyworth, who administered the complete activity.

The old Holbrook building represented an antiquated type of construction, built at three different periods. The exterior walls were brick, with wooden interior walls, floors and roof construction. Brick walls, which were once exterior walls, separated the three sections. The width of the corridors varied with the section. In one part they were 20 feet wide, a great waste of valuable space. Heat ducts were built into the end walls and the rooms were further cut up by the use of



The first floor plan of the new Holbrook School.

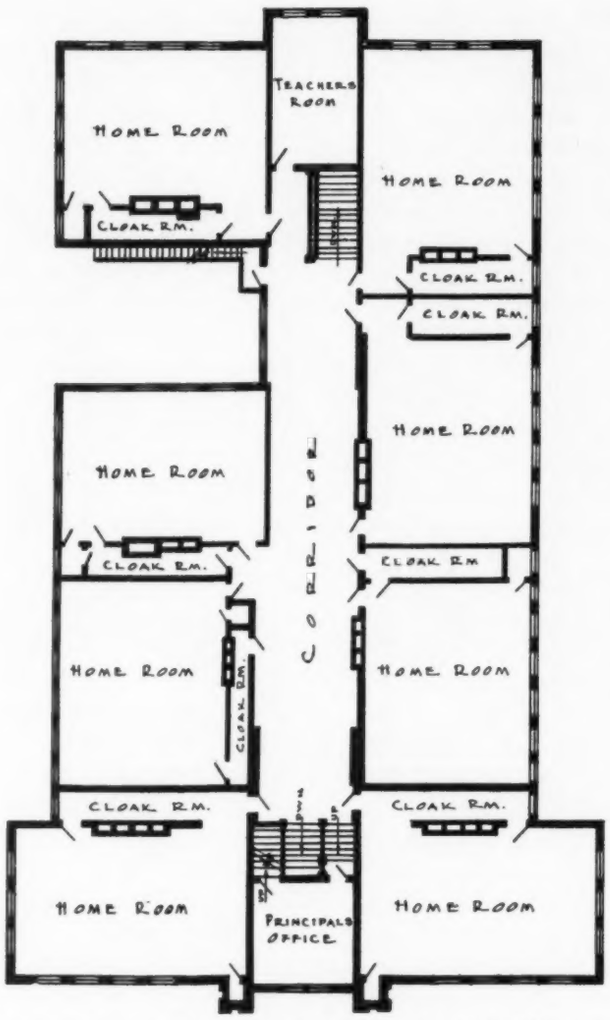


This is the first floor as it appeared before remodeling.

cloakrooms. The roof construction consisted of large heavy wooden trusses spanning from one side of the school to the other, a distance of slightly more than 70 feet. This roof not only contributed to a great load upon the exterior walls but also provided a large, high attic space of no other use than for casual storage. Taken as a whole, the building was an exceedingly bad fire hazard and a menace to the closely built surrounding territory.

At the request of the superintendent, the building was first surveyed and drawings made showing the building as it actually existed. As in many of our older school buildings, where construction inspection was lax, the existing building showed considerable variation from the original drawings. This is so generally true in the case of old buildings that every remodeling job should be started upon drawings based upon exact measurement of the existing plant rather than upon the basis of original drawings.

From this construction survey it was apparent that the only structural features of the building that could be retained were the brick walls that



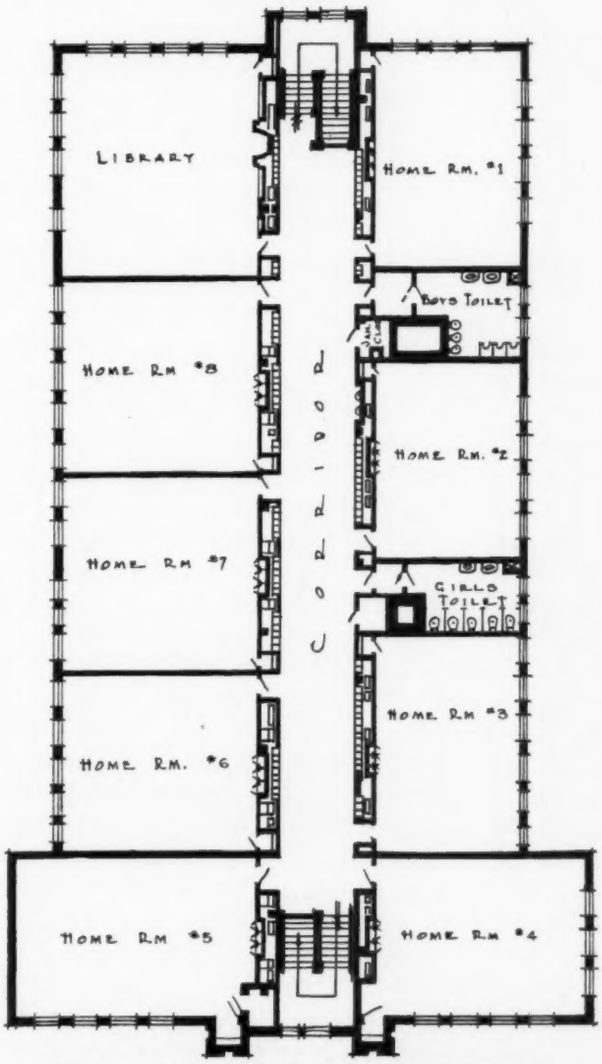
Inconveniences of the second floor of the old building are here illustrated.

formed the shell and the interior brick walls that formed the limits of the period sections. Successive sampling of the construction indicated that these walls were sound.

By careful calculation and experimental inspection, it was determined that new fireproof floors and roof could be placed upon the old walls and would give no more weight than the old floor and roof construction with its enormous trusses. With that end in view a tentative plan was worked out with the thought of wrecking everything except the brick walls, building a new system of concrete columns and beams on both sides of the new corridors and spanning from this interior concrete construction to the exterior walls with fireproof floors and a fireproof flat roof. The corridor walls were to be made of metal lath and plaster enclosing the concrete columns and the second floor was to be made with metal lath and plaster suspended from the roof slab.

From this tentative layout the cost was estimated by the architect and a practical builder. After the proposition had been considered thoroughly by the board of education, the superintendent was authorized to carry out the plan. As described in the accompanying article by Professor Moehlman, the architects furnished the educational specialist with drawings of the shell area. Upon this basis, the educational plan was developed and was approved by the superintendent.

The problem of interposing within the old brick shell as it existed, a modern school layout to meet the needs of the educational plan of the administration for approximately 800 pupils, arranged in such a way as to make use of the existing windows and still secure adequate natural lighting, was difficult. The large rooms, such as the auditorium and gymnasium, were created by leaving out the first floor in these rooms, thus using the basement and first story in one room, with the second floor forming the ceiling of the room. The old basement windows in these rooms were bricked up and the gymnasium walls faced with salt glazed brick up to the first floor level. This procedure provided a satisfactory facing for these



The new second floor is convenient, roomy and comfortable.

walls and at the same time materially strengthened them, making up for the loss of lateral strength due to the removal of the first floor. The radio room was placed between the gymnasium and auditorium so as to provide easy access from both rooms when phonograph record music for instructional purposes was sent to either room by means of loud speakers.

An air shaft of brick was arranged to convey the fresh air from the roof to the basement, where it is filtered before passing to the heaters. The well lighted end of one of the corner rooms was made a conservatory and the balance, a science room. For home rooms Nos. 6, 7 and 8, where the corridor side of the room was too far from the windows for adequate natural lighting, skylights were provided as well as windows.

Steel stairs were provided on the ends of the corridors, with terrazzo treads and nonslip tile nosings and plastered soffits to deaden the sound. The shower and closet stalls were made of marble, a material that cannot be defaced easily.

A serious problem was the adequate waterproofing of the basement walls and the precautions necessary to prevent flooding of the basement due to the backing up of the sewers. Due to inadequate public sewers in Hamtramck the ground water is not properly carried away and the sewers back up at times of heavy storms. Adequate protection was given this building against ground water coming through the walls, by waterproofing material placed on the inside of the old basement walls behind the new plaster and behind the new salt glazed brick in the gymnasium.

New Plumbing System Installed

The sewer problem was solved by means of a new plumbing system in the building together with a tandem pump installation arranged in such a way that all sewage and rain water passes normally to the public sewer in iron pipes. However, if the sewer at any time backs up or for any other reason does not drain, the pumps are automatically started and are capable of forcing the discharge from the basement drainage system into the public sewer.

Another problem was what to do with the old interior woodwork such as doors, casings and base. As the cost of the building was to be kept as low as possible and within the amount set aside for that purpose, it was decided to use all the old interior finish woodwork, which was varnished pine, and to provide new pine finish to match the old where required. Then the old varnished pine and the new pine, as well as the school furniture, were painted and enameled in colors selected by a specialist. The result has a pleasing, restful effect, in keeping with the modern color tendency.

The plans and specifications were finished, bids taken and the contractor selected prior to the close of the school year. The contract called for the contractor to be given possession of the building, June 1, 1929, and the building to be finished, September 1, 1929, a period of three months, with a penalty clause requiring the contractor to forfeit $50 per day for every day after September 1, 1929, that the building was uncompleted. School was dismissed just previous to June 1, and on September 3 the children were housed in a newly completed building.

The present building, as redesigned and reconstructed, is as permanent and meets the needs of the present day educational plan as well as though an entirely new building had been constructed.

Why a Study of School Financing Is Needed

The excess of expenditures over revenue for public education in the United States was 305 per cent greater in 1920 than in 1910, according to C. F. Hedges, superintendent of schools, Neenah, Wis. Many communities, when confronted with the method of financing a building program, are influenced by common practice. Mr. Hedges points out that a study made of the extent of the use of the pay-as-you-go plan in 133 cities of varying population and of widely scattered location over the United States shows that during the last ten years of the total amount expended for new public-school buildings, approximately 16 per cent was financed by the pay-as-you-go plan and 84 per cent by other methods.

To quote Mr. Hedges directly: "There is little relation between the size of a city and the percentage of school expenditures for new buildings that are borne by bond issues. Thus forty-eight cities of a population from 10,000 to 30,000 spent during the last ten years a total of about $29,752,000 for new public-school buildings. Of this sum 28.15 per cent was paid by direct tax. By way of comparison, five cities of a population of 500,000 and over expended $120,497,000, of which 26.13 per cent was provided by direct tax. In general, for the 133 cities studied there was a variation from 3 per cent to 28 per cent in the amounts of money raised by direct taxation for new school buildings during the last ten years.

"Any community that attempts to plan its financial policy with reference to new school buildings by observing the practice in nearby cities is likely to be misled in thinking that the observed practice is a general one."

The Relation Between Teachers' Marks and Pupils' Behavior*

Statistical study of one elementary school in Cleveland, tends to confirm the theory that school marks are closely interrelated with the classroom conduct of pupils

By WILLIAM L. CONNOR, Chief, Bureau of Educational Research, Cleveland

THAT elements of the general problem of the relation between teachers' marks and pupils' behavior may be pictured clearly, it may be well to begin this study with the simple story of a fourth grade pupil in one of the Cleveland schools.

Thomas was revealed to the persons making this study by a marked discrepancy between his mental and educational ages as shown by test records. His teacher reported that he acted in a smart or sullen fashion by turns, failed to study and spent a great deal of time in day dreaming. His school record to the end of the third year was good, which is to say that his achievement and effort marks had been uniformly above average and his former teachers reported that he had been successful and happy. During the first semester of the fourth year a change was noted. Marks had fallen to average or below, and failing and near failing marks had appeared at both the first and second marking.

The situation described here was noted during the last interval for which marks are given during the second semester of the school year.

How Pupil's Attitude Was Changed

A visit to Thomas' class showed that he was inattentive and overaggressive by turns. The teacher and principal both informed the investigator that the boy's stepfather had been arrested for bootlegging. The mother confirmed the story and said that she had had a hard time to get along since her husband's arrest. The child, when given a personal interview, said that the other children had seen his father arrested as they were going home from school, had teased him about it and had told his new teacher the first thing on Monday morning. The arrest had occurred at the interval between the end of the first and the beginning of the second semester when the boy had been promoted from 3-A to 4-B. Thomas blamed the teacher for his troubles, saying that she never gave him a chance.

As noted before, the tests showed a discrepancy between mental and educational ages. The difference was in favor of the educational age, raising a presumption of hard work and successful achievement. The facts were brought to the attention of the teacher, who was gradually brought to believe that the boy's misbehavior under his disgrace and the teasing of the other children had perhaps misled her, causing her to rate his achievement low. A reversal of her attitude of suspicion and better marks helped the boy. By the middle of the following semester, she reported that a sudden resentful or sullen glance from Thomas when he was spoken to sharply seemed to be the extent of his misbehavior.

Hypothesis Is Stated

This story is much too simple and the outcome too satisfactory to be typical of the individual behavior difficulties encountered in the study, and yet it reveals most of the essential elements studied and makes real what the statistics go to show.

The problem set up for this study is implied in the title. Some of the data useful in the solution appear in Table I. The best answer to the problem is not a law but a hypothesis. This hypothesis is presented here as a brief summary of the findings. The paper then proceeds with the data upon which the hypothesis is founded.

When we consider the findings of Wickman[1] as reported in "Children's Behavior and Teachers' Attitudes," and of Hartshorne and May[2] as reported in "Studies in Deceit," and add to them the findings of this study and the experience of the workers engaged in it, it seems safe to accept as a working hypothesis the following statement:

The number and seriousness of the behavior difficulties present in any group of children are a function[3] of the social strength of the individual

*Paper read before Section Q of the American Association for the Advancement of Science, New York City.

[1] E. K. Wickman, Children's Behavior and Teachers' Attitudes, The Commonwealth Fund, Division of Publications, 1928.

[2] Hartshorne and May, Studies in Deceit, The Macmillan Company, 1928.

[3] "Function" is here used, somewhat loosely, in the sense of a quantity dependent upon a peculiar combination of two other quantities.

TABLE I—RELATION BETWEEN TEACHERS' MARKS, MENTAL AND EDUCATIONAL AGE AND PUPILS' BEHAVIOR

One Elementary School, Cleveland, 1925-26

A	B	C				D			
Room	Grade	Achievement as Judged by School Marks, Compared With Achievement in Relation to Ability to Achieve as Shown by Mental and Educational Tests*				Achievement as Judged by School Marks, Compared With Behavior, Connor's Adaptation of Wickman's Scale			
		a			b	a			b
		Upper Half T. M.**		Lower Half T. M.**	Critical Ratio	Upper Half T. M.**		Lower Half T. M.**	Critical Ratio
207	6-A	+11.3 months	<	+17.9 months	3.1	— 3.9	>	— 6.8	2.9?
211	6-B	— .7 months	<	+ 1.4 months	.7	—22.7	>	—30.3	2.8
101	6-B	— 6.9 months	<	— 5.5 months	.7	—11.0	>	—17.8	2.1
209	Overage	+ 9.6 months	>	+ 6.4 months	1.4	—36.9	>	—50.5	1.2
212	H. I. Q.	— 7.8 months	<	— 3.8 months	1.1	—15.4	>	—24.7	2.3
210	5-A	— 2.4 months	<	— .3 month	1.0	—15.9	>	—26.7	1.5
208***	5-A	— 1.5 months	>	— 2.6 months	.3	—34.0	>	—67.2	4.7
203	5-B	+ 4.4 months	>	— 3.6 months	3.2	— 8.9	>	— 9.3	.2
208***	5-B	+ .6 month	<	+ 3.8 months	1.5	—18.8	>	—40.1	3.9
111	H. I. Q.	— 9.6 months	<	— 1.0 months	2.5	— 9.5	<	— 9.0****	.2
204	4-A	+ 1.2 months	<	+ 3.3 months	1.4	—24.0	>	—30.3	2.1
205	4-B	+ 6.9 months	>	+ 3.5 months	2.1	—23.7	>	—40.3	2.4
201	4-B	+ 3.3 months	=	+ 3.3 months	.0	—18.4	>	—30.4	4.6
206	3-A	— .1 month	<	+12.0 months	5.0	— 4.1	>	—17.0	3.9
112***	3-A	— 1.3 months	<	+ .7 month	.9	—40.3	>	—54.7	3.5
112***	3-B	+ 4.3 months	<	+ 9.2 months	2.1	—42.9	>	—49.2	1.9
109	3-B	+ 4.9 months	<	+ 9.5 months	3.3	— 6.6	>	—12.3	3.8
107	2-A	—17.8 months	<	—17.7 months	.1	— 5.0	>	—10.3	3.1
108	2-A	— 5.6 months	>	—12.6 months	2.3	—11.9	>	—18.7	2.1
110	2-B	—11.0 months	>	—14.5 months	1.7	—21.0	>	—25.9	1.8

*Mental and educational ages determined by National Intelligence Test in Grades 3-6 and Detroit Primary Group Intelligence Test in Grade 2, for mental tests, and Stanford Achievement Examination, for educational test.
**Teachers' marks.
***Same teacher.
****The only difference in behavior which is in the opposite direction from the difference in achievement judged by teachers' marks. Probably of no significance.

members of the group and the social pressures under which they live and work.

In the course of the argument leading to this hypothesis, it appears that school marks are a form of social pressure which, wrongly used, aggravates misconduct in children and makes it more difficult for them to develop unified personalities. It also appears that the wrong use of marks and the social pressures they generate are sufficiently common to warrant a serious study of the problem and the creation and use of remedial and preventive measures.

The data and the argument leading to the proposed hypothesis follow:

Each item in Wickman's behavior chart was rated by each teacher twice for each child in her class in one of four squares. For the purposes of this study values were assigned to the squares as follows:

Box 1 *Box 2*

A	B	C	D	A	B	C	D
0	1	2	3	0	1	2	3

In Box 1 A has never occurred; B has occurred once or twice but no more; C recurs with occasional frequency; D has become almost habitual.

In Box 2 A is of no consequence; B causes only slight difficulty; C causes considerable difficulty; D causes very serious difficulty.

The behavior score of any pupil was the sum of the numbers applying to the squares checked. It is the averages of such scores that are compared in Table I, Column D.

The school marks in each subject at the last marking were averaged for each pupil. Each class was then divided into two groups approximately equal in number on the basis of these marks. This procedure forms two groups which exhibit the greatest possible apparent difference in achievement that it is possible to show on the basis of teachers' marks. In other words, there is no overlapping of these groups in achievement according to teachers' marks.

Table I, Column D. In the Cleveland school where the study was made, teachers' marks in achievement in the subjects studied by their pupils agreed closely with the amount and seriousness of the misbehavior of their pupils. Every difference in behavior score averages, except one, is in the same direction as the difference in achievement according to teachers' marks. Eight out of twenty of the obtained differences in behavior are great enough to be reasonably reliable. In other words, they express what must be considered a fairly constant tendency on the part of the teachers whose work is under consideration, to mark pupils in the subjects they study in agreement with the frequency and seriousness of general classroom misbehavior of the pupils as it is judged by the teachers.

Wickman found and reported in his "Children's Behavior and Teachers' Attitudes" that teachers in this same Cleveland school, and elsewhere in Cleveland and in the United States as a whole, quite generally tend to note the frequency of, and to regard as serious whatever behavior on the part of pupils interferes with conventional schoolroom order or transgresses commonly accepted codes of morals. He also found that offenses against moral codes are rare.

The Relation of Order to Achievement

In the light of these findings we are almost forced to believe that there is some sort of causal relation between offenses against conventional classroom order and the achievement of pupils as judged by teachers' marks. There is nothing startling about this conclusion. In fact, it is just what the average teacher everywhere would say is true. Some might add that it is a waste of time to determine by tedious scientific observation a fact so obvious as to be almost universally recognized by experienced teachers.

Table I, Column C. Pupils in grade 2-A to 6-A in the Cleveland school studied were given the National Intelligence Test or the Detroit Primary Group Intelligence Test and the Stanford Achievement Examination, and mental and educational ages were determined on this basis. Differences between mental and educational ages (E.A.—M.A.) were determined for each pupil and recorded as months, plus or minus. This gives a crude measure for each pupil of his success with relation to his ability to succeed. The data reported in Table I, Column C, are averages of these differences between mental and educational ages.

On the basis of the technique just described, in the school where this study was made a peculiar relation seems to have existed between the real achievement of pupils as judged by test results and the apparent achievement as judged by teachers' marks. The differences of the averages of the achievements of the pairs of groups created by dividing each class on the basis of the teachers' marks, when compared on the basis of the test results, were in the same direction as differences in achievement as judged by teachers' marks in six cases out of twenty, but reliably so in only one case out of the six. In thirteen cases out of twenty the reverse was true. Here the differences revealed by the tests were in the opposite direction to differences revealed by teachers' marks, and reliably so in three out of the thirteen cases.

Teacher Not Always in Error

In one case no difference in achievement on the basis of the tests was noted for the two groups arranged to show the greatest apparent difference in achievement that could be shown by teachers' marks. This would seem to indicate a somewhat uncertain tendency for the judgment of achievement in this school on the basis of the common observation of teachers, to be reversed by the tests in approximately two-thirds of the cases, and reliably so in about one-seventh. Since four of the groups were taught, judged and tested by two teachers, it would appear that about one-sixth of the teachers in this school were at the beginning of this study judging the achievement of their pupils to be exactly the reverse of the actual achievement as shown by tests.

Table I, Column D. As noted at the beginning of the argument, when this study was undertaken there was a strong tendency for the teachers' judgments of achievement and behavior to agree. When the findings just noted (Table I, Column C) are considered together with this fact, it would almost seem as if the influence of behavior in determining the marks was at the time of the study considerably greater than the influence of achievement.

The data presented in the table do not inevi-

tably fasten the error, if an error has been made, on the teacher. It is altogether possible that the system is at fault in that it has put older and slower but well trained pupils in the same groups with younger and brighter but relatively less well trained pupils. If the administrative practice in the school and school system is at fault in the manner mentioned, some such condition as appears here would result. From the standpoint of the immediate problem it is of slight consequence whether the maladjustment noted is due to the teacher or to the system as a whole.

Table I, Rooms 207, 206 and 109. On the other hand, there are three rooms where differences in actual educational achievement as measured by the tests are in the opposite direction from apparent differences in educational achievement as measured by teachers' marks, and reliably so. This reliability is indicated by the ratio of the obtained difference to the probable error of the difference. When the pupils in these three rooms are again compared on the basis of teachers' marks and behavior scores, it is found that in each case the difference in behavior agrees with the difference in apparent achievement as indicated by teachers' marks. In other words, in each case in which the test results and the teachers' judgment are found to be in dependable disagreement, this disagreement is accompanied by a dependable agreement between misbehavior and apparent achievement as judged by teachers' marks. But there are five other dependable agreements (Table I, Rooms 208, 5-A and 5-B, 201, 112, 107) between apparent achievement as indicated by teachers' marks and misbehavior of pupils.

Pupils' Achievements Often Misjudged

These agreements are not accompanied by dependable disagreements between real achievement as measured by tests and apparent achievement as measured by teachers' marks. It would seem, then, that the misjudgment of pupils' achievement by teachers[1] is likely to be accompanied by recognizable behavior difficulties. Similarly, recognizable behavior difficulties, because they tend to control marks independently of achievement, tend to be accompanied by misjudgment of pupils' achievement. However, it seems that the latter is less likely to happen than the former. Stated briefly and the other way around, reliable disagreements between apparent achievement as judged by teachers' marks and real achievement as judged by test results are more likely to be accompanied by reliable differences in misbehavior than are reliable differences in misbehavior to be accompanied by disagreements in achievement as judged by teachers and by tests.

Hartshorne and May in "Studies in Deceit" report at the end of their chapter on "Teacher Influence"—in deceit—that "The hypothesis may be entertained, then, that a subtle difference between teachers exists, even when all are working consciously and skillfully along progressive lines, and that this difference is occasionally large enough to account for wide differences in deceptive behavior. In further investigations it should be borne in mind, however, that even here variations in home background and in the character of particular children may account for a particular teacher's success or failure in any given year by introducing thus into any brief record a large element of chance."

Children Seek Recognition in Classroom

In another section of the same book, "Situations Provocative of Deception," these authors say, following Healy ". . . the situation in which the child is placed is the determining factor in his behavior." In the "General Conclusions" the authors say, "Where relations between teachers and pupils are characterized by an atmosphere of cooperation and good will, there is less deception . . . ."

Hartshorne and May studied one form of misbehavior—deceit. This study is concerned with any form of misbehavior that teachers recognize and report.

Table I, Rooms 207, 206, 109. It would appear that pupils in rooms where misjudgment of their achievement is apparently warped most by the tendency of teachers to rate success in subjects according to the manner in which pupils conform to conventional standards of classroom behavior, really do their work remarkably well. At least, on the average, their educational ages show substantial margins over their mental ages.

A detailed examination of many individual cases shows that where low marks in subjects seem to be given for real or suspected misconduct in school or out, most children are stimulated to work harder and to achieve more. However, if the marks continue to be low, these children seem to develop further and more serious ways of misbehaving. In only a few cases do low marks given apparently for disciplinary reasons, unless long continued, result in a lowering of the actual achievement of the pupil. It would seem, then, that children seek recognition even in the classroom and that they tend to seek it first by doing good work. Then, if it is still denied, they seek it by cheating, lying or disturbing the regular procedure of the classroom by

[1] It may be a truer explanation of this misjudgment to say that pupils are placed, through poor administrative practice, in situations in which teachers find it difficult to give adequate recognition for honest effort accompanied by real mastery according to the ability of the pupils.

a more direct attack. Of course, many compensate in other ways and get their satisfaction out of books, the movies or in day dreaming. Most children seeking the satisfaction denied them in regular classroom work get it in a variety of ways, some useful and others harmful.

The experience of those working on the study seems to confirm the implication of the data presented here that school marks, achievement and behavior are interrelated so as to affect each other rather than that any one or two are the cause and the other one or two the result.

Wherein the School Fails

When we take the evidence collected by Wickman and by Hartshorne and May, together with the data of this study and the experience of the workers in it, the path of misconduct seems in the case of most children who misbehave habitually to be a vicious circle. When a child somehow arrives on the path, society seems to conspire to keep him there. Probably few children are put on this path or kept there wholly by the school. On the other hand, it seems probable that the school by assigning pupils to tasks they should not be asked to perform, by asking them to perform tasks in a manner in which they should not be expected to perform them, by failing to recognize good performance or by all of these together contributes substantially to the sum total of the misconduct of children.

The number and seriousness of the acts of misconduct of the members of a social group as for example the pupils in a class or school, are probably a function of the social strength of the individuals who compose the group and the social pressures under which they work.

Character or personality, defined as the habitual social behavior of the individual, is probably formed somewhat after the fashion of the following empirical formula:[1]

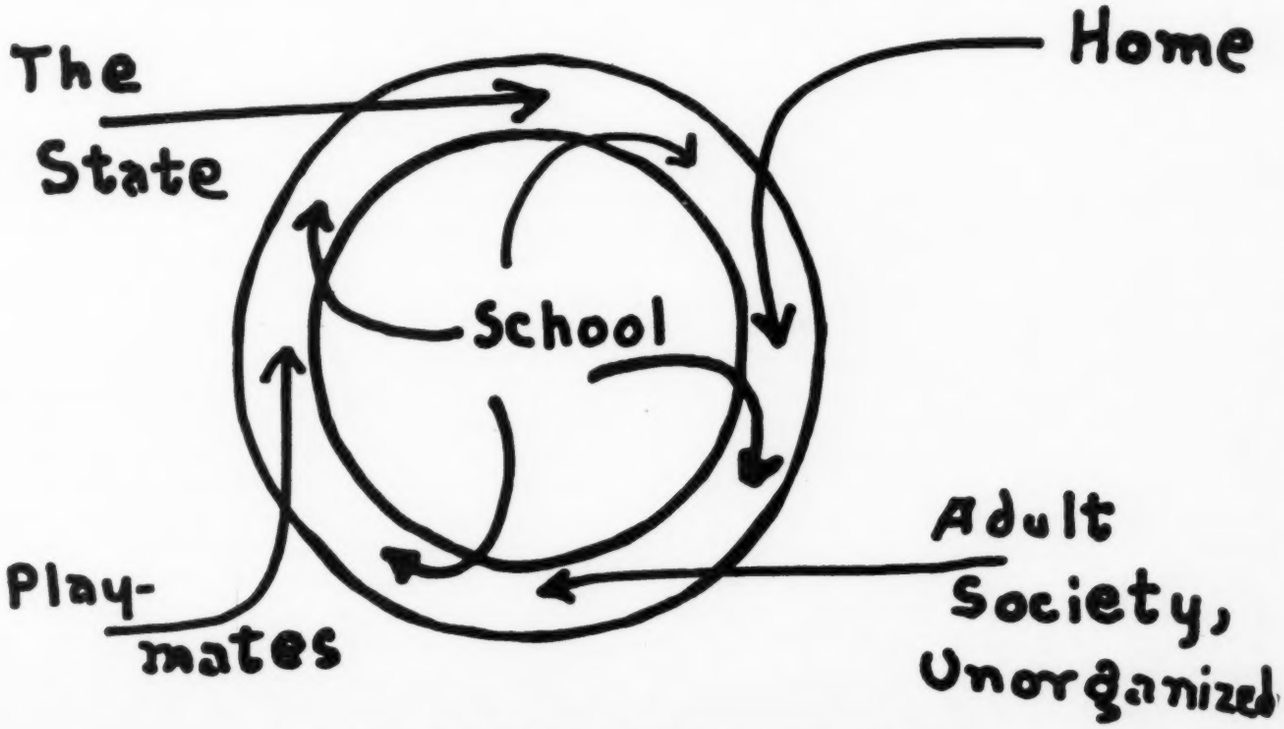
$$C = R\left(\frac{S \times P}{S - P}\right) \text{ in which}$$

C = Character.
S = Social strength.
P = Social pressure.
R = The number of repetitions of the acts quantitatively described by the expression in parentheses.

It seems difficult to find a character or personality that cannot be explained on the basis of this formula.

This formula used unmathematically as the basis for a program of remedial measures seems to work. It seems probable that a program of preventive measures could be built upon it that would prove even more effective in practice. For example, the mental and educational test records and other school records of all children might be examined to discover any discrepancies existing there. These discrepancies would reveal one of the causes for behavior difficulties before the difficulties had manifested themselves in any signifi-

[1] The mathematically inclined will immediately discover by substitution of numbers for S and P that the formula will not behave logically when S-P is less than +2 but greater than —1. This fault of the mathematical expression of the hypothesis stated here should encourage someone to find a better formula. At least, it should not discourage the practical worker from using the present formula as a tool for research pending the formulation of a better statement.



The path of misbehavior—where the pressures come from.

cant manner. The child whose record shows such discrepancies might be studied under the following heads taken from the character formula:

Character		Social Strength	Social Pressure
Satisfactory Behavior	Unsatisfactory Behavior		

The source of each type of unsatisfactory behavior might be sought in the inequalities of social strength and social pressure and an adjustment of one to the other made in the hope of affecting behavior favorably. Probably few children have the social strength to behave well at all times when they are assigned to a class where the demands of the curriculum are much beyond or much beneath their intelligence and previous training. Few children would probably behave well for very long when, as sometimes occurs, good achievement is marked low and poor achievement high by the teacher. Then the child who is under too great a strain at home or among his playmates out of school will almost certainly bring to the schoolroom undesirable ways of behaving and, because of the obscuring effect of his irritating ways make it extremely difficult for the teacher to see the good that he does. Any systematic attempt of this kind to understand why children behave as they do, if pursued calmly and systematically and with some degree of penetration ought to forestall most of the serious behavior difficulties that now arise in the school.

Programs based upon this hypothesis might be set up in a number of centers and the results carefully watched.

The Duty of the School

While it seems improbable that the hypothesis formulated here will ever receive complete mathematical proof or disproof, the progress made in mental and social measurements in the past fifty or seventy-five years should encourage some earnest workers to seek such proof or disproof.

The data of this study and the experiences of the workers in making it, tend to confirm the theory that school marks are a form of social pressure closely interrelated with the classroom conduct of pupils, that school marks in the subjects pupils study are influenced by behavior and that the behavior of pupils, in turn, is influenced by the marks. Knowing this, the school can do no less than use the scientific means at its command to see that neither the system nor any appreciable number of teachers in it contributes in any substantial way to the formation of habits of misbehavior by the children entrusted to its care.

The Duties of a District Superintendent

What are the duties of a district superintendent? Henry Roberts, Jr., district superintendent, Philadelphia public schools describes them thus:

"In Philadelphia the superintendent of schools is assisted by four associate superintendents who divide among themselves the citywide administration of the activities of the public-school system. This group constitutes the board of superintendents which meets at least once weekly to discuss and formulate general policies.

"The educational activities administered by the district superintendent include the kindergarten, the elementary grades, the seventh, eighth and ninth grades constituting the junior high school, and continuation and trade schools. The senior high schools are not among the district activities but are immediately under control of one of the associate superintendents.

Keen Observation Needed

"The most important function of the district superintendent is to observe and improve the processes of administration and supervision in the schools of the district. The major part of the time of the district superintendent is consumed in exercising this function.

"While visiting schools to determine the efficiency of the principal's administration, the district superintendent, of course, spends most of his time observing classroom practices. His observation of the actual teaching process is necessary, moreover, because he must report on the service of teachers during their first or probationary year, and also of those who after a certain number of years of experience expect to advance to Class B of the salary schedule. Again, teachers in service who desire promotion to higher types of teaching positions must pass examinations, and combined with the result obtained in the examination is a numerical rating for present service given by the district superintendent after conferences with the principal.

"Each district superintendent is assigned in connection with a subject of the curriculum as chairman of a committee of principals who pass judgment on textbooks submitted for adoption. From the textbooks adopted the principals of the schools select the books to be used in their schools. This same committee may be called upon to modify or reconstruct the courses of study in the particular subject..

"The duties described constitute the most important of those within the province of the district superintendent in Philadelphia."

The University of Illinois health service station where 57,000 students called for consultation last year.

Decreasing Sick Rate Noted Among University Students

Study covering a five-year period at the University of Illinois reveals that earlier attention is given to illness which is reflected in an envious health record among the students

By J. HOWARD BEARD, M.D., University Health Officer, University of Illinois

THE last decade has broken all previous health records. In the registration area of the United States, the mortality rate has fallen from 14 deaths per 1,000 population in 1916 to 11.8 in 1926, the lowest since the establishment of the Census Bureau. During this period Illinois has earned the name of the "healthiest big state." No other state with a population of four million or over has had so low a death rate. For the six years ending December 21, 1926, its annual mortality rate was only 11.5 per 1,000 population.

The student group at the University of Illinois has a remarkably low morbidity rate. In 1921 there were 24.6 cases of reportable communicable disease for each 1,000 students registered; in 1927-28 it had decreased to 2.88. In 1921 every student admitted to the hospital remained on an average of 7.2 days; in 1927-28 the average stay was only 3.7 days. Exclusive of communicable disease whose period of confinement is prescribed by law, the average stay was 3.4 days.

The decrease in the average number of days that sick students spend in the hospital not only indicates diminished morbidity but also earlier attention given to illness, fewer complications, prompt recovery and greater hospitalization of the slightly ill. This is shown by the fact that in 1921 only one student in 13.7 used the hospital; in 1927-28 one student in 8.4. To make possible further reduction of illness among students and consequent absences from classes, a study has been made of hospital and medical records and living conditions of students over a period of five years in an attempt to discover factors contributing to an increase in the morbidity rate.

The average number of students living in 819 houses, of which sixty were fraternities and nineteen sororities, in the so-called student district

during this period was 7,727 a year. Students living at home usually reside outside of this district and were not included in this study because they were widely distributed throughout Champaign and Urbana with rarely more than two at the same address.

For purposes of analysis, the student district was divided into ninety-seven zones, each one block square. This distribution of student population is shown in Chart 1. These zones were grouped according to the density of student population, the distance from the campus and the types of houses. The houses were also classified according to the number of students living in them and to the proportion of students who were members of the voluntary mutual benefit hospital association. Fraternity, sorority and unorganized houses were all included. Each of these zones and groups was studied to ascertain if conditions were present that might influence the trends of student morbidity.

As a general rule the liability to hospitalization increases in proportion to the population density. Although this is to be expected, it presents certain interesting irregularities and exceptions. While the liability for hospital confinement in general and for colds in particular tends rather consistently to follow directly the trend of population density, that for the quarantinable diseases seems to vary inversely with it.

Several factors produce this result. In the zones

Distribution of Student Population By Zones

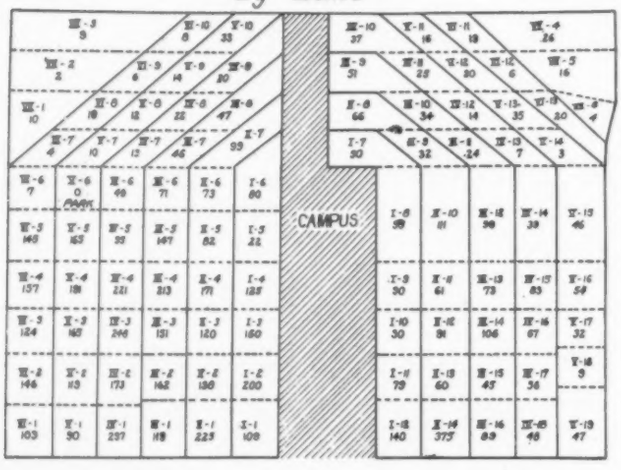


Chart 1.

of greatest student density are fraternities and sororities housing from twenty to forty students each. A fraternity student with a slight ailment is more likely to seek admission to the infirmary than a student who lives in a lodging house. It is the general practice of fraternities to have their sick members seek hospitalization since it offers the best facilities for promoting a prompt recovery. An early admission to the hospital also reduces the period of quarantine for the house should the disease be diagnosed later as communicable.

The student in the lodging house is more apt to remain there when he is only slightly ill because his landlady may care for him. Then, too, he is less likely to be urged by his associates to go to the hospital. Thus, one student out of every six in a fraternity house will be admitted to the infirmary during the year, one out of every seven in a sorority house and one out of every eight in a lodging house. While men more frequently than women seek hospitalization for wound infections, coryza, bronchitis, tonsillitis and pharyngitis, the difference is too small to be significant—5.8 per cent for the men and 5.5 per cent for the women—but the variation in their admission rates is not inconsistent with the fact that the men have a slightly greater exposure and liability to injury than do the women students.

Liability to Quarantinable Disease

One man out of ninety-nine fraternity men is admitted to the hospital for quarantinable disease, one woman out of 142 sorority women and one student out of eighty-six students who live in a lodging house are admitted. The greater liability to quarantinable disease of students living in small groups and in zones with low population density is due to a greater contact with school children who have a higher susceptibility to the exanthemata than do men and women of college age. Students, even in cases of only twenty to a zone or of a few living in a residence, often enjoy the advantages of homelike conditions but they are thrown into more or less close contact with children in the grades. The lower admission rate of women students is due in part to the fact that a larger percentage of women have acquired immunity to communicable disease by having had it before matriculation. In addition, women students have less contact with the school children of Champaign and Urbana, since they, more than the men, are housed in dormitories, sororities or clubs.

Theoretically, the distance a student lives from the campus might exert an influence on morbidity due to greater exposure of the student to unfavorable weather conditions and to the lowering of his resistance by possible fatigue incidental to repeated trips between the lodging house and the classroom. The facts, however, lend no support to such a theory. Although students as a group are not extremely careful in protecting themselves against wet and chill, those who live only a block or two from the campus are less likely to exercise

A general ward for students at the McKinley University Hospital, Urbana, Ill.

precaution than those who have their rooms at a greater distance.

The benefit to be derived from the exercise and from the greater exposure to sunlight and fresh air gives those who live more than five blocks away an advantage over those whose lodging houses are closer to the campus. The group living nearer has a hospital admission rate of one student out of eight; the group residing the farthest away has an admission rate of one in twelve. The liability to hospitalization is less for the members of the distant group. This is particularly true for infections of the respiratory tract. The admission rates for the two groups for colds, bronchitis and tonsillitis are 2.7 per cent and 3.27 per cent respectively. The difference in the rate for quarantinable diseases is negligible—for the "near bys" 1.14 per cent and for the "far aways" 1.26 per cent.

Rates for the "Near Bys" and "Far Aways"

Because the "near bys" are also in the zones of greater population density, more opportunities for contact with the ill or with carriers are present, and this fact conceivably may be either the sole or only a contributing factor to the greater morbidity requiring hospital admission among members of this group for infections of the respiratory system. While the admission rates for the two groups are practically identical for communicable disease requiring quarantine, the influence of the greater association of the "far aways" with school children more than offsets the disadvantages of population density with its direct contact with a greater number of individuals.

The liability to hospitalization tends to increase with the number of students living in a house. Students in houses having thirty-five to forty occupants and in those with ten or less are liable to hospital confinement in the ratio of one in six and one in nine.

Hospitalization of Sick Students

This increased morbidity in the larger groups may seem to be rather than actually to be due to crowding, because certain factors that are conducive to better health are more pronounced in the larger than in the smaller houses. In certain instances mere numbers do not necessarily indicate congestion. A group of twenty students in a residence not especially constructed for the purpose for which it is being used may have to live under conditions less compatible with ideal sanitation than one of twice the number living in a fraternity house especially built to accommodate forty or fifty students.

The larger the group, however, the greater the probability that a carrier of disease is present and the better the opportunity for "droplet borne" infection to attack a larger number of persons. In houses with from thirty-five to forty occupants the annual hospital admission rate for coryza, tonsillitis and bronchitis is 5.8 per cent as compared with 2.98 per cent in houses having less than fif-

teen students. For quarantinable diseases the larger group has a rate of .9 per cent and the smaller a rate of 1.49 per cent.

In five dormitories—three for women and two for men—housing from seventy-four to one hundred and fifty students, the liability of their occupants to hospital confinement was greater than that of the twenty-five organized houses of from thirty-five to forty students. The average rate for the former was 17.7 per cent and for the latter, 15.17 per cent. In these dormitories, as in the large fraternities and sororities, numbers seem to have contributed to a higher hospital admission rate. This increase is as much indicative of the operation of factors conducive to better health as to the operation of factors conducive to a higher morbidity rate.

The slightly ill student living in a dormitory will more readily enter the hospital and is less likely to attempt to treat himself or to stay in his room than is his classmate living in a smaller group. The policy of the managers of the dormitories of getting the sick student to the hospital promptly not only accounts for increased hospital admissions but it reduces the number of contacts of the ill with the well and thereby reduces the amount of sickness among the students.

No Common Dining Hall for Men

The men's dormitories have no dining services. Their occupants, therefore, may eat at many different lunch rooms and thereby increase their chances of being served in dishes that are not properly sterilized after each separate use. This handicap, however, is offset by the reduced exposure to droplet infection incidental to the coming together of a large group in one dining hall.

The dormitories for women have a thoroughly modern kitchen and dining service. Dishes are washed mechanically in boiling water, and opportunity for the transmission of disease is largely confined to that of droplet infection. The rates for the respiratory diseases among the women living in the three dormitories are 6 per cent, 6.2 per cent and 6.67 per cent as compared with 2.97 per cent among those living in houses in groups of less than 20. The rates for quarantinable diseases are .4 per cent, 1.3 per cent and .67 per cent against 1.51 per cent for houses containing less than ten students and 1.08 per cent for all lodging houses.

Mumps Most Frequent Communicable Disease

The rates for infection of the respiratory tract in the men residing in the two dormitories are 3.5 per cent and 5.2 per cent against 2.97 per cent in houses having less than twenty occupants. The incidence of communicable disease requiring quarantine was 1.40 per cent and 1.08 per cent against 1.51 per cent in the group of less than ten students. In the dormitory with the lower rate for respiratory disease the rooms have adjoining sleeping porches and provide for three occupants. In dormitories without a dining service there is less opportunity for close contact than in an organized house that provides lodging, food and facilities for social life.

For the five-year period, mumps was the most frequent and scarlet fever the most important communicable disease among the students. In a total of 448 cases of communicable disease, mumps accounted for 31.2 per cent and scarlet fever 23.6 per cent. Mumps, German measles, and scarlet fever were responsible for 80 per cent of the quar-

TABLE I—INCIDENCE OF COMMUNICABLE DISEASES IN MEN AND WOMEN BEFORE MATRICULATION

	Men (Total 27,817)		*Women (Total 10,818)*	
Disease	*No. Men*	*Percentage of Men*	*No. Women*	*Percentage of Women*
Mumps	17,191	61.8	6,274	58.0
Rubella	2,504	9.0	1,731	16.0
Scarlet fever	4,395	15.8	2,067	19.1
Measles	22,726	81.7	9,876	91.3
Chicken-pox	13,630	49.0	7,432	68.7
Small-pox	1,029	3.7	357	3.3
Diphtheria	2,253	8.1	1,038	9.6
Typhoid fever	1,919	6.9	692	6.4
Whooping cough	15,244	54.8	7,367	68.1
Total cases	80,891		36,834	
Cases per capita	2.9 (men)	3.4 (women)	Women 17.2% higher	

The Dean Clark recreational room for convalescents, McKinley University Hospital.

antinable diseases. Small-pox, a preventable disease, caused 3.1 per cent.

Of the 819 houses in which students lived during the five-year period communicable disease occurred in 299. Ninety-one houses had more than one case of communicable disease; only thirty-three had more than two cases. Rubella and mumps showed the greatest tendency to repetition. This is due to their mildness, their presence often being unknown to the student until the disease is fully developed. In many cases they are not even recognized until after wide exposure has occurred in the house. In only seven houses did the same disease reoccur in succeeding years. German measles and scarlet fever were each responsible for three reoccurrences and small-pox for one. Their presence in the same house within two years is probably without significance because they were prevalent in the student group at the time.

Women Show Greater Immunity Than Men

Men students are more likely to acquire a communicable disease demanding quarantine than women. This is because a higher percentage of women, by reason of their having had communicable disease before matriculation, are more immune to such disease than men. From Table I it will be seen that women students by this method have acquired 17.2 per cent greater immunity than men students. Before matriculation the men have shown a greater predisposition to mumps. The rates of both for typhoid fever and small-pox are about the same.

The morbidity rates for small-pox of 3.7 per cent and 3.3 per cent for men and women of average ages of eighteen and nineteen years are a sad commentary upon the ability of a people who boasts of its efficiency to use an absolutely effective preventive measure in protecting itself against the ravages of disease, death and economic loss.

Urban and Rural Students Studied

While the proportion of men to women in the student group is 2.6 to 1, that of their admission to the hospital for communicable disease is 3.4 to 1—out of a total of 448 cases, 346 were men and 102 were women. This disproportionate ratio holds true for every disease except German measles and chicken-pox which, while in accord with expectancy on the basis of the number of men and women composing the student group, really shows greater incidence on the women than on the men since a higher percentage of the former than the latter had both these diseases before entering college.

A population of 5,000 was arbitrarily taken as the dividing line between urban and rural communities and all of the students coming from within the state were classified on this basis. It was found that 69.05 per cent of the student group was from the city and 30.95 per cent from the country. If divided according to sex, it was

found that 31 per cent of the men and 29.4 per cent of the women came from rural homes.

With the exception of scarlet fever and diphtheria the students from the country whether men or women have had communicable disease in a higher percentage than those from the city. (This is shown in Chart 2.) How much of this difference represents greater susceptibility of one group than the other, better knowledge of the control of communicable disease or more efficient health administration is conjectural.

A Mutual Benefit Hospital Association

It is, however, significant that in the country where opportunity for contact is seemingly less than in the city the rates for such dreaded diseases as diphtheria, and scarlet fever are lower, and that those for the "harmless" measles, mumps and chicken-pox are higher. All of these diseases with the possible exception of chicken-pox are transmitted through the secretions of the nose and throat. The chance for the spread of diphtheria should be as good as for the spread of scarlet fever if the resistance of the country boy and girl to diphtheria and scarlet fever is not greater than that of the city boy and girl. With less exposure and consequently less opportunity to acquire immunity by auto-inoculation, it would seem illogical to assume that the student from the rural district has less susceptibility to these diseases than the one from town. The real cause for the difference most likely lies in the greater precaution taken in rural homes against the spread of scarlet fever and diphtheria because of a wholesome fear of these diseases.

Rural Students Pay Higher Hospital Rates

It will be seen from Chart 3 that the students in college from the country have a greater susceptibility to both diphtheria and scarlet fever than their classmates from the city. The urban and rural groups may live under identical conditions, yet the rural group will have proportionately more communicable diseases than the urban group. The only exception is that the country girl is apparently less liable to scarlet fever than the city girl. The hospital admission rates, exclusive of the quarantinable infections, are about 2 per cent greater for the student from the country than for the student from the city.

By voluntarily purchasing a membership in a mutual benefit hospital association, for three dollars a semester, a student may obtain general ward care, not including a doctor's bills, for a period not to exceed twenty-eight days. At the beginning of each semester students are urged to join the association. They are told that prompt care in a hospital promotes early recovery, lessens the loss of time from the classroom and shortens the duration of the scholarship slump incidental to illness. This advice and publicity cause an average of 42.8 per cent of the students to become members of the association.

For communicable diseases requiring quarantine the period of hospitalization is the same for both the member and the nonmember. If, however, the other causes for hospital admission are considered it is seen from Table II that the greater the percentages of a group belonging to the association the larger the number entering the hospital for treatment.

What Association Membership Means

Membership in the association ensures prompt isolation. The fact that association members have an average stay in the hospital of 3.71 days while the nonmember remains 4.15 days indicates it as a factor in the reduction of the severity of illness and of its consequent effects upon the individual. The nonmember of the association who becomes ill is not infrequently a self-supporting student who has practiced false economy by saving the fee for membership. Not only does he have a longer illness, a slower recovery and a greater loss of time from work but he also suffers the further hardship of financial handicap.

TABLE II—ASSOCIATION MEMBERSHIP PERCENTAGE AND COMPARISON OF HOSPITAL ADMISSION RATE

	Group With Over 80% Membership	*Group With 50% Membership*	*Group With 30% Membership*	*Group With Under 20% Membership*
Student group as a whole...	13.6	11.8	9.5	8.4
Fraternities	14.5 [1]	16.1	14.5	...
Sororities	21.2 [2]	14.8	11.5	...

[1] Five fraternities with over 80 per cent membership in the association.
[2] One sorority with over 80 per cent membership in the association.

An examination of the medical records of the men of two classes on the basis of whether or not they were working part time to put themselves through school revealed that self-supporting students made an average of 3.6 visits per year to the health service station as against 3.3 of their classmates who did no outside work. However requests of the workers for excuses from classes averaged less for the year (1.6) than did requests from those who did not have to work (1.75).

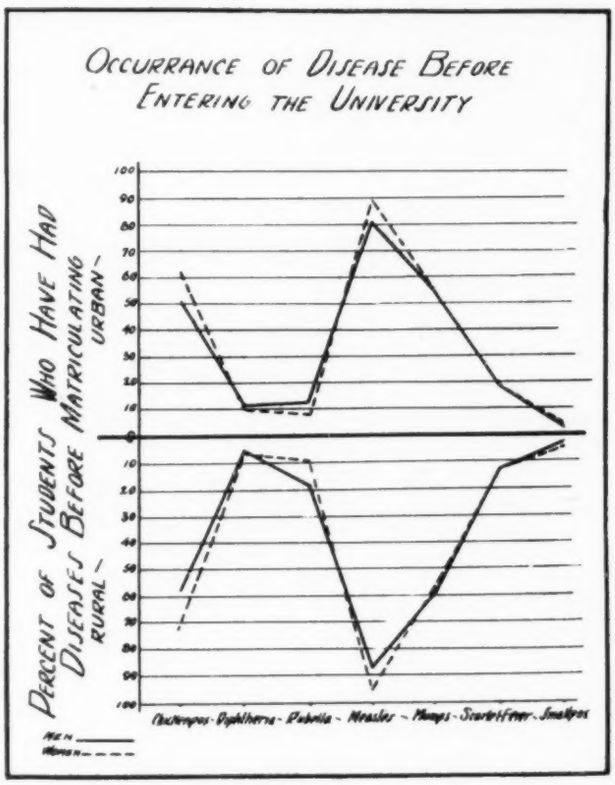

Occurrance of Disease Before Entering the University
Percent of Students Who Have Had Diseases Before Matriculating
Urban
Rural
Chickenpox · Diphtheria · Rubella · Measles · Mumps · Scarlet Fever · Smallpox
Men
Women

Chart 2.

While the percentages of the workers and nonworkers holding membership in the hospital association were 37.3 and 38, the admission rate for the former was .08 per cent and for the latter .09 per cent. The self-supporting student stayed in the hospital an average of 4.2 days; the one who did not have to work stayed 3.3 days.

Although the worker is subjected to somewhat greater stress and exposure than the nonworker which causes him to seek medical advice more frequently, he loses less time from class by requesting temporary excuses. His higher call rate may not only indicate lowered resistance but it may also suggest that he more keenly appreciates the greater effect of illness upon his ability to remain in college. He apparently stays out of the hospital as long as he can, is sicker when he enters and, in spite of the necessity of the early resumption of his outside work, has to stay 27.3 per cent longer than his associates who do not have to work to support themselves adequately.

The longer a student has been in college, the less becomes his liability to be confined in the hospital. The average admission rates for the four classes for the five-year period are: freshman .44 per cent; sophomore .23 per cent; juniors .18 per cent; seniors .14 per cent. Several factors contribute to this result. Greater age usually means less susceptibility to the communicable diseases of childhood that occur not uncommonly in the student group. The upper classmen have had wider experience, have studied hygiene, have to a great extent taken advantage of available means of immunization and, in general, have acquired a greater knowledge of the essentials of healthful living.

The Decreased Liability of Upper Classmen

If they are compelled to do outside work, they have the more desired positions and to this extent they undergo less stress and less exposure than do the under classman. Their longer presence in the community usually tends to give them the advantage of such slight differences as may exist in living accommodations. They are better adjusted to their environment, are less subject to anxiety and worry incidental to life under new conditions, suffer less from the wear and tear of lost motion, have acquired a saner outlook on life, are more stable and are generally better able to meet the demands made upon them without exhibiting symptoms of abnormality.

Even with a very low sick rate, a large student group is not unlike the population of a city. It is subjected to conditions mental and physical, occupational and recreational, personal and environmental and climatic and geographical that have a bearing upon its morbidity, affect the hospital admission rate of its members, influence their economic status and determine their success.

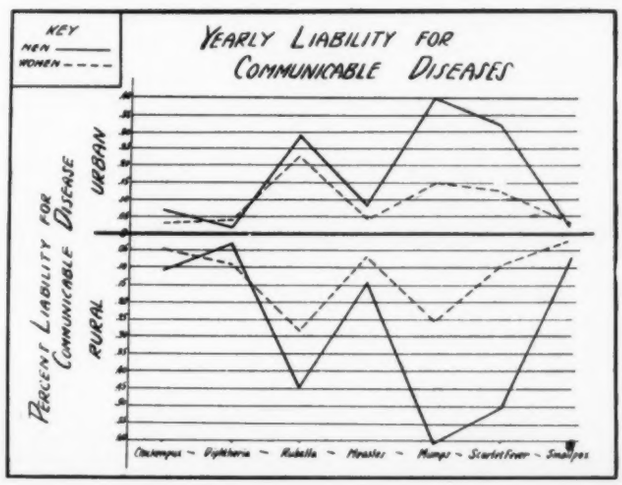


Chart 3.

Some Facts That Should Be Known About the School Field

A brief review of school statistics that reveals the vast extent and importance of the school as an industry catering to nearly 20 per cent of our total population

By J. S. PARKER, Director of Research, The Nation's Schools

THE average school executive may be aware of the fact that his profession is as important as any in the general welfare and progress of the country. Yet few executives realize that the business of education is the largest of all industries, employing the largest force of workers and catering to the largest population group—nearly twenty per cent of our total population.

Facts on the school field are ever impressive.

There are over twenty-seven million children enrolled in the schools of America.

Eighty-five per cent of our school age population is enrolled in the schools of the country as follows:

82.0 per cent in elementary schools
14.0 per cent in high schools
2.6 per cent in colleges and universities
1.4 per cent in teachers' colleges and normal schools

Altogether the total figure of pupils and students exceeds twenty-seven million, with another million to be added for personnel. The details of these population facts will be found in accompanying tables.

What of school progress and tendencies? It is well known that ratios of attendance among children of school age have shown great improvement in recent years, that the number of days in the school year has increased and that per capita costs for education have doubled. These things are to be expected in a country that has shown such tremendous growth and development during the past few generations. However, there are other significant tendencies, generally unknown among school people, which are full of enlightenment.

The average yearly cost of education per capita to-day is $17. School maintenance each year demands a budget of more than two billion dollars. In cities, education requires approximately 37½ per cent of all civic expenditures. In the number of school buildings there has been an increase of only 4.26 per cent since 1900. During the same period, school enrollment has increased 86.5 per cent. Again, this trend toward larger schools is reflected in the average value of school property per pupil enrolled. In 1922, according to government reports, the per pupil investment was $129. To-day the figure is in excess of $155, and a steady gain is being made as our national standards are bettered.

Perhaps the most interesting facts on school trends exist in a comparison of rural and city school facilities. The tables reproduced here are full of pertinencies. It is revealed, for example, that approximately 5,500 schools of the one-room type go out of existence annually to give way to

Nearly one million teachers are required to educate American school children.

About five thousand, five hundred schools of the one-room type go out of existence annually.

the larger structure and the consolidated school. Yet, there is much improvement to be made in rural territories. So far, the cities have been a few jumps ahead. Of all elementary schools, 90 per cent are rural. However, they cater to only 52.8 per cent of all elementary-school pupils. The city with 10 per cent of schools has 47.2 per cent of all elementary pupils. Among high schools, the city is still more dominant. Of all high schools, 77.6 per cent are rural, but they cater to only 28.8 per cent of all high-school pupils. The city, with its 22.4 per cent of high-school buildings, has 71.2 per cent of all pupils.

The table of comparisons between city and rural schools is interesting. A number of facts on average enrollments, average school maintenance costs and average number of teachers per school, gives a graphic picture of school facilities throughout the United States. It is surely safe to assume that the biggest changes to take place will be in rural districts where larger schools and more centralized concentration are destined to make rapid strides.

SCHOOL BUILDINGS

Total number of school buildings	258,000
(Figure includes total buildings used, irrespective of individual school units, listed below)	
One-room schools	158,000*
Total public elementary schools	193,700
Consolidated schools	14,100
Total public high schools	22,000
Junior high schools	1,100
Junior-senior high schools	1,900
Private and parochial elementary schools	7,000
Private and parochial high schools and academies (1,241 with boarding facilities)	2,124
Public colleges and universities	144
Private colleges and universities	769
Teachers' colleges and normal schools.	299

*Approximately 5,500 one-room schools go out of existence each year to be replaced by the larger type of structure, such as the consolidated school.

HOW THE SCHOOL RANKS IN THE GENERAL BUILDING FIELD FOR ANNUAL NEW CONSTRUCTION

		Per Cent
Office Buildings	$691,482,000	13.5
Apartments	671,250,800	13.1
Schools	*597,781,800*	*11.7*
Industrial	385,455,400	7.5
Hotels	344,676,200	6.7
Public Buildings	341,211,200	6.7
Hospitals	252,527,000	4.9
Apartment Hotels	246,631,000	4.8
Churches	213,171,200	4.2
Dwellings (below $20,000)	176,996,600	3.6
Stores	176,468,600	3.4
Clubs	174,640,400	3.4
Theaters	163,559,000	3.2
Banks	146,033,800	2.9
Automotive	145,580,600	2.8
Dwellings ($20,000 to $50,000)	114,912,600	2.3
Welfare	114,147,000	2.2
Dwellings (over $50,000)	99,596,200	1.9
Community	60,651,800	1.2

Finally, the progress of the school is forcibly brought out in a comparison of annual expenditures for all types of new building in the country. In all, the school ranks third with a total expenditure of $597,781,800 for new buildings, or 11.7 per cent of all construction in the United States. Here it will be noted that no other institutional field, hotel, hospital or church, spends anything like the amount demanded yearly for new schools.

In other details, about 2,222,500 pupils and students are graduated each year. Approximately 64,500 school cafeterias are in existence to-day and nearly 7,500 more are installed an-

It takes over two billion dollars a year to support America's quarter of a million school buildings.

Forty million dollars a year for transportation—and sixty thousand busses.

nually. In addition, about 11,400 schools serve lunches and hot dishes. Food service costs about $243,591,900 a year and approximately 8,000,000 meals are served each day of the school term. About $40,000,000 is spent in transportation during the school year. Near to 60,000 motor vehicles are in use for this service of conveying pupils to and from school.

The progress of the school field in its physical development has well rivaled the strides made in educational procedures, vocational guidance, teacher training. Each year witnesses new improvements, new and higher standards of facilities that point to an ever increasing efficiency in the operation of our entire school system.

Yearly Cost for School Maintenance

	Per Pupil Cost	*Total Cost*
Public elementary	$ 58.93	$1,231,554,300
Public high	173.72	589,189,600
Private and parochial elementary	58.93	86,812,400
Private and parochial high schools and academies	173.72	44,145,500
Public colleges and universities	593.75	151,781,000
Private colleges and universities	402.14	189,203,900
Teachers' colleges and normal schools	179.19	44,855,200
		$2,337,541,900

School Personnel

(Administrative officers, principals, supervisors of instruction and teachers)

Public elementary and high	799,300
Private and parochial elementary, high and academies	86,300
Public colleges and universities	19,100
Private colleges and universities	37,100
Teachers' colleges and normal schools	13,500
	955,300

School Population

Students in public elementary	20,999,300
Public high	3,650,900
Private and parochial elementary	1,473,100
Private and parochial high schools and academies	254,100
Public colleges and universities	255,600
Private colleges and universities	470,400
Teachers' colleges and normal schools	280,900
	27,384,300

Comparative Facts on Public City and Public Rural Schools

	City	*Rural*
Elementary schools	19,370 or 10%	174,330 or 90%
Elementary-school pupils	9,908,800 or 47.2%	11,084,500 or 52.8%
Average number of pupils enrolled in each elementary school	512	63
High schools	4,900 or 22.4%	17,100 or 77.6%
High-school pupils	2,599,400 or 71.2%	1,051,500 or 28.8%
Average number of pupils enrolled in each high school	530	61
Average cost of school maintenance, elementary and high, per pupil enrolled	$129.82	$75.01
Average value of school property, elementary and high, per pupil enrolled	$299.00	$99.00
Average number of teachers per school, elementary and high	26.3	4.3

Flexibility Characterizes the English School System

A philosophy that recognizes the educative value of individualism and voluntary effort holds sway over matters educational in England, this study shows

By PROF. I. L. KANDEL, Teachers College, Columbia University

"ELEMENTARY education is that education which is given in an elementary school." This, the official definition of elementary education, is characteristic of English administration, a system that aims to secure flexibility and variety, to encourage experimentation and to set up the fewest obstacles to the development of education that are compatible with a national system.

To the American student, familiar for the most part with the vertically organized system, closely articulated, and with a small minority of the population in private schools, or to the student familiar with the highly centralized and almost monopolistic system of France, the English system offers a striking contrast. At first sight the system appears chaotic, untidy and full of contradictions. An examination will reveal that underlying this apparent chaos there is a definite and clearly recognized philosophy.

English education is not a system but a collection of systems working side by side and all contributing to the main end of national education. It is characterized by variety set in a national framework. English education, like American, serves to illustrate the thesis that centralization and uniformity are not the essential and inevitable features of national education. A national system, according to the English principle, requires the general acceptance of a national ideal, the guidance and supervision of a central authority, and a well coordinated system of educational organization and opportunities, towards which England is rapidly moving.

Diversity of Plans Noticeable

English children may or may not enter school at the age of three. In a few cases nursery schools are being established that will receive them at the age of two. The law requires all children between the ages of five and fourteen to be efficiently educated and permits local authorities to raise the age limit to fifteen, but it does not prescribe what school a child must attend. The burden is on the parent to prove that his child is being efficiently educated, whether at home, in a private school or in a public school. In the case of a private school efficiency may be proved by having the school inspected. But even a public elementary school may be denominational or it may be undenominational; in either case both types of schools form part of the public system, the only difference being that the building of a denominational school belongs to a board of trustees and denominational religious instruction is given in it. Even the actual organization of an elementary school into different departments may vary under the same local authority.

"Public" Schools Have Prominent Place

The same conditions prevail in the field of secondary education, which may be given in public or private schools, and under certain circumstances and conditions private schools may receive public assistance. In the development of a tradition of secondary education the so-called "public" schools, which to-day include besides the great public schools more than two hundred schools that fall in the same category, have played an important rôle. These "public" schools, although all are private institutions and although only a few invite inspection by outside bodies, constitute a part of the national system whose place cannot be disregarded.

The flexibility and variety that are characteristic of English education have arisen in part through historical reasons, in part they are based definitely on an accepted philosophy of government. Until 1832 the government paid but slight attention to education. In that year the first public grant was made from the national treasury for education. Elementary and secondary education were provided through private, voluntary and philanthropic efforts. The grant mainly for elementary education and for the training of teachers was slowly increased and encouraged the de-

velopment of greater educational facilities.

It was not until 1870 that publicly elected school boards with the right to levy taxes were set up to provide elementary education, and it was not until 1876 that compulsory elementary education was set up. In the meantime, through the science and art department established in 1856, the development of education in science and art was encouraged by the payment of national grants on the results of examinations. It was not until 1900 that a national Board of Education, with a president, was established to coordinate the national efforts for education. Two years later the Education Act of 1902 was passed, establishing the present machinery for the coordination of education by local authorities. In 1918 the powers of the local authorities were further increased and the semblance of a national system was set up under the consolidated Education Act of 1921.

Little Interference by Central Authority

The philosophy underlying English administration is based on the principle that the less interference there is by a central authority, the better for the development and progress of the system. The general theory is that the education of a nation is a moral affair, a matter of personalities in which initiative and spontaneity must be given free play; a national ideal cannot be imposed; it must be lived. There is thus constant opposition to state monopoly and state interference. Public education is part of a competitive system, allowing opportunities for diversity of opinions, conduct and group activities. The justification for this principle is that out of this variety and diversity come growth and progress.

The principle was summarized from the negative side by John Stuart Mill in his "Essay on Liberty": "A general state education is merely a contrivance for moulding people to be exactly like one another and as the mould in which it casts them is that which pleases the predominant power in the government . . . it establishes a despotism over the mind, leading by natural tendency to one over the body." The same idea was inherent in a recent statement of the president of the Board of Education (1926): "They were increasingly recognizing the truth that it was private enterprise, initiative and generosity in education which kept education sound and healthy. It would be an evil day for education when it all tended to pass under one general uniform state system." And again, "It was essential for all education that it should have a varied, different and individual initiative to keep it healthy."

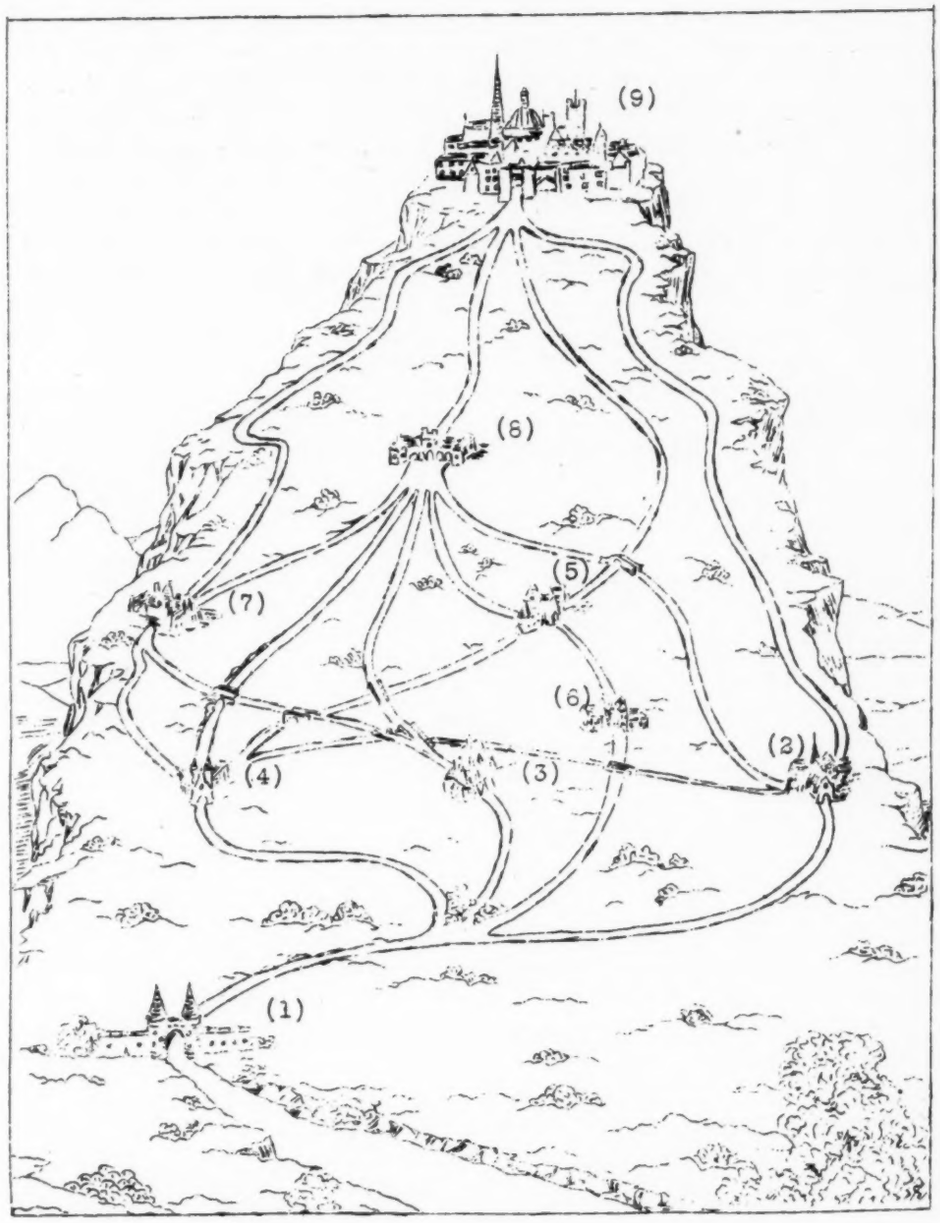
The fact is that the English hate cut and dried schemes, thought out and planned once for all. The Englishman prefers to grope his way on the basis of experience and in human affairs mistrusts logic because it is too inflexible. This makes him fear the action of the state as leading to mechanical uniformity. Hence he prefers to rely on the English power to work institutions to suit changing situations. This may lead on the surface to a system that appears chaotic and purposeless, but in practice is full of life and vitality, and recognizes the educative value of individualism and voluntary effort. There is progress under this system, but not the kind of progress that implies violent breaks with the past; rather is it based on compromise and concessions demanded by the situation. This characteristic was already noted by Burke as far back as 1790. "We compensate, we reconcile, we balance. We are enabled to unite, in one consistent whole, the various anomalies and contending principles that are found in the minds and affairs of men. From hence arises not an excellence in simplicity, but one far superior, an excellence in composition."

If, then, the English system of education looks like a patchwork quilt, if no two schools even in the same locality are alike, this is not due to caprice or accident, it is due to the belief that the ways to educational salvation are not one but many. To the mechanical smoothness of educational systems that are well thought out and planned in advance, the English system presents by contrast a ragged edge, but the smooth system needs a social upheaval to produce a change, while along the ragged front of the English system there is always some school, some individual, some authority that is already pointing the way to the next stage. For this right to experiment, to utilize the local opportunities, to exercise initiative, England sacrifices that uniformity of quality attained in more highly centralized systems. The moral personality of institutions as of individuals must be conserved.

Few Principles to Guide School Head

It is characteristic of this system that the whole literature that goes in this country under the title of principles of administration, the principal and his work, school management, is almost completely absent. The administrator, no matter in what sphere of activity he may be engaged, learns his work on the job. There may be certain mechanical forms of routine with which he has to comply, but in general administration is a matter of personality and experience.

If one were dealing with a centralized system, it would be necessary and logical to begin a description of the administrative machinery with



In the "Cathedral of Learning" depicted in figurative fashion at the right, the various routes to higher education are shown. The steps to the university at the top of the hill, as represented by numbers, are as follows: (1) infants of 5 to 7 years; primary, 7 to 11; (2) secondary schools "A," 11 or 12 to 16 or 18; (3) secondary schools "B" (commercial bias) 11 to 14 or 16; (4) secondary schools "B" (industrial bias) 11 to 14 or 16; (5) trade schools "C," 14 to 16; (6) trade preparatory schools, 12 to 14; (7) continuation schools, 14 to 18; (8) evening classes, technical institutes, 16 to 18; (9) university or technical college of university rank.

the central authority. In England it would be more logical to begin with an individual school, for it is the school that is the unit. It is here that the principal and his teacher have almost complete freedom tempered by responsibility to draw up the course of study, to classify and promote pupils, to employ a variety of methods according to their ability and training. There are officials, both local and central, known as inspectors, but their function is less intensive than that of the American supervisor. There are certain norms set up by the professional training of the personnel, by "Suggestions for the Consideration of Teachers" issued by the local and central authorities, and by certain standards of attainment expected of pupils at specific stages of their careers. But within these norms schools even in a given area differ more among themselves than do schools in different systems in the United States. So far as inspection is concerned, the main function of the inspectors is to serve as the chief agents of "cross fertilization," to discover the best that is being done under the conditions of practice, and to bring this information to the attention of teachers rather than to enforce any theoretical standards.

At this stage we can take up the administrative organization of English education, remembering that the system viewed from the national standpoint includes both private and public schools. For the administration of public schools four types of local authorities have been set up. These fall into two groups—the county and the county borough authorities, and the municipal boroughs and urban districts. The county is the large historical area with which students of Eng-

lish geography are familiar; of these some are divided for purposes of educational and other administration. The county borough is a large city with a population of more than 50,000. Both these areas are entirely autonomous and may provide any type of education from the nursery school up to higher education. None of these maintains a university but they may levy taxes to grant subsidies to the universities and scholarships to university students.

Local Council Responsible for Education

Education is interpreted in its broadest sense and includes all kinds of educational, social and recreational activities for the welfare of the population, young and adult. The other two areas—the municipal borough or city with a population of over 10,000 and the urban district which corresponds to a township with a population of over 20,000, are responsible for the administration of elementary education. Facilities for secondary education are provided by the county in which these authorities lie, the theory being that the more costly types of education should be supplied by cooperative efforts in the larger area.

The authority for education in each of these is the popularly elected council which is responsible for all types of local government, including education. Each of the local activities, including education, is administered by a committee of the council, which consists of elected representatives. In order to secure the advice of persons more directly interested in education each committee may coöpt members, such as representatives of private schools or of the universities or others. The committees vary in size from five to fifty (the London committee is an exception and has 150 members or more). The committees have full power in all aspects of education within their competence, except in finance. The council as a whole is the responsible authority.

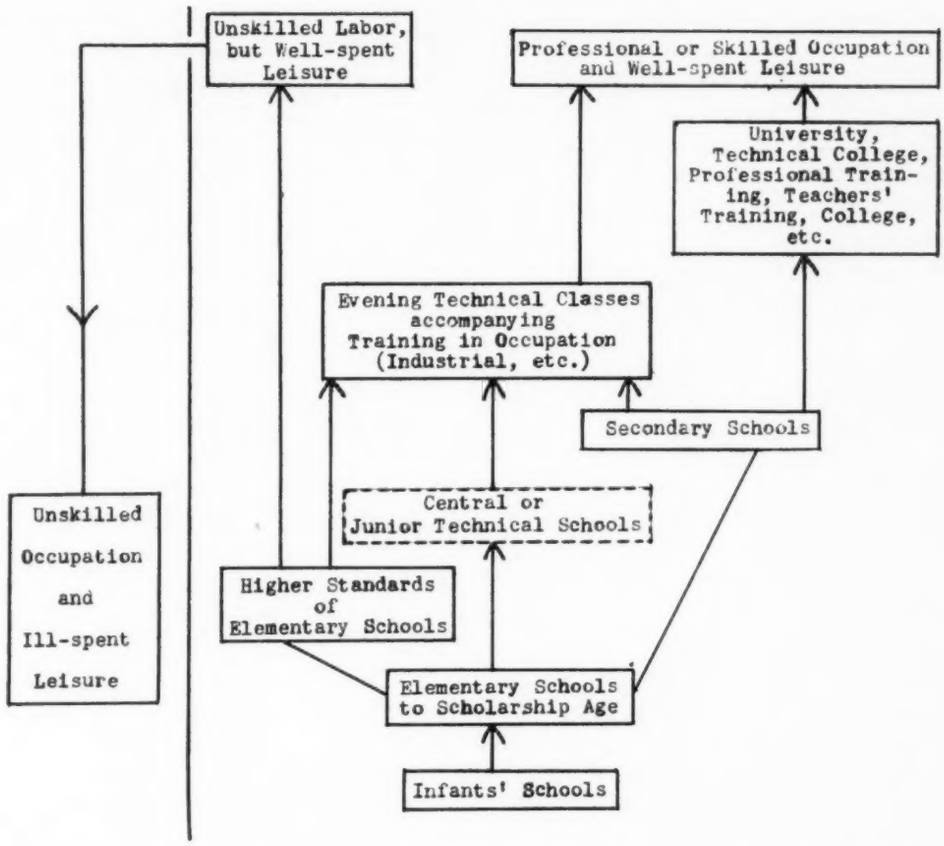
The task of educational administration is becoming so complex and important that there has gradually developed the position of director of education, who corresponds to the American superintendent. He holds office, as do all public officials, during good behavior. If the quality of a school depends on the ability of the principal, the quality of education in any area depends on the ability of the director of education. The importance of the position has called out men of high academic attainments and of considerable administrative ability, developed not by any system of formal study and training but in the school of experience. Undoubtedly a large share of the credit for the progress of education in England in the last twenty years is due to these officials who have taken advantage of and at the same time stimulated the awakened interest in national education. A large measure of their success has been due to taking a long view of the educational needs of their areas and enlisting public support through the organization of education weeks. The administrative powers of the local authorities are limited, first, by provisions of the Education Act, by regulations covering the amount of local taxes that may be raised for education, and second, by the extent of the local resources that may be drawn upon. Beyond this the cost of education is shared in almost equal proportions between the local authority and the national treasury which makes its payments through the Board of Education.

Thus it is on the financial basis that the relations between the local and the central authorities are determined. The theory is that the Board of Education has a certain amount of funds at its disposal for educational purposes. In order to share in these funds the local authority must conform to certain regulations and requirements.

Local Authorities Free to Plan Methods

In England the local authorities and the schools are free to do what they please in the matter of curricula and methods, limited only by the ages and psychological stages of the pupils and by the main purposes of the school concerned. This is the implication of the definition of elementary education as that education which is given in an elementary school, and of secondary education as that education which is suitable for pupils between the ages of twelve and seventeen. So far as the educative process is concerned, that is, those things that go on in the school, there is complete freedom tempered by responsibility. The Board of Education issues "Suggestions for the Consideration of Teachers," memoranda and reports on the teaching of various subjects, but these are suggestive only. The board does not prescribe curricula or courses of study. For, according to the president of the Board of Education (1927), "If Governments, whether central or local, began to prescribe to teachers definite methods of teaching, they ran the risk of all those evils which they had seen in various forms both in Prussia of the past and the Russia of to-day."

The control of the Board of Education, that is, the central authority, concerns itself with all those factors that conduce to the best conduct of the school and the process of education. Thus the board sets up minimum standards in such matters as buildings, size and provision of playgrounds, medical inspection and treatment of pu-


Unskilled Labor, but Well-spent Leisure
Professional or Skilled Occupation and Well-spent Leisure
University, Technical College, Professional Training, Teachers' Training, College, etc.
Evening Technical Classes accompanying Training in Occupation (Industrial, etc.)
Secondary Schools
Central or Junior Technical Schools
Higher Standards of Elementary Schools
Unskilled Occupation and Ill-spent Leisure
Elementary Schools to Scholarship Age
Infants' Schools

Here is another drawing showing the steps of the educational ladder. This chart depicts the routes from the beginning of instruction through the usual courses leading to professional or skilled occupation and well spent leisure. It also shows the final points reached through technical school training and through the higher standards of elementary schools.

pils, qualifications and remuneration of teachers, compulsory attendance and its enforcement, size of classes, and in secondary education the provision of opportunities and free places. Grouped together these standards concern the *externa* of education. Beyond this the Board of Education does not impose requirements. (Owing to the present economic crisis the standards mentioned cannot always be enforced.)

These standards being set up the Board of Education deals individually and separately with each of the 318 local authorities, since the responsibility "for the progressive development and comprehensive organization of education in respect to their area" lies on each local authority. Accordingly each local authority is required to prepare a draft scheme for the development of education in its area over a period of three years and to submit this scheme for approval by the board.

An excellent example of the opposition to central control is offered by the history of the system of development by schemes. The Education Bill of 1917 provided that the board might refuse to approve such schemes when submitted by a local authority. In the act as passed in 1918 this power of rejection was dropped and provision was made by which the board might either approve a scheme or, if not satisfied with it, must invite the local authority to discuss it in conference. In cases of disagreement, the report of the proceedings must be laid before Parliament. There is so far no instance in which this step has had to be taken. This method of conference, discussion, compromise and settlement is one of the recognized methods of contact between the Board of Education and the local authorities.

Hence the local authorities are left to choose but they are helped in their choice by the guidance and advice of the board, based on the cumulative experience of the whole country and stimulated by some financial inducement. This method of consultation is well illustrated by the recent history of teachers' salaries. Teachers had suffered considerably from the shrinkage in the value of salaries after the War. The Board of Education instead of prescribing the salary scales to be paid by the local authorities urged the appointment of a number of committees on elementary, secondary and technical school salaries. Each of these committees, under the chairmanship of Lord Burnham, contained representatives of the local authorities and of the teachers and recommended certain scales of salaries suitable for different parts of the country. The Board of Education then indicated that agreements must be made on the basis of these scales between the teachers and the authorities in each area and that these agreements would then be sponsored by the board.

Similarly, the board has recently abandoned its practice of examining students in normal schools for the teachers' certificates and grants these certificates on the basis of examinations conducted by the training colleges in cooperation with the universities, organized in regional groups. Standards in secondary education are set up in the same way by a number of examining bodies recognized by the board.

Government Grant May Be Withheld

The question may now be raised as to what would happen to a recalcitrant authority that failed to comply with such requirements as the board may set up. There would be an investigation through the board's inspectors, followed by consultation and discussion, and withholding of the grant if an agreement could not be reached. Two instances in illustration may be cited. About twenty years ago a number of authorities felt the need of establishing an institution intermediate between the elementary and the secondary school. The Board of Education has up to the present refused to recognize these schools as anything but elementary schools and its grants have been paid on this basis. The additional cost, since the expense of maintaining these schools is necessarily higher than that of elementary schools, is borne by the local authorities.

In the second instance a local authority refused to pay the scale of teachers' salaries allocated to it. The teachers went on strike and were supported by the National Union of Teachers and by the parents who engaged the teachers to conduct private schools to which they sent their children. The local authorities employed such teachers as they could secure and generally with unsatisfactory qualifications. The parents could not be proceeded against because the children were, under the law, being efficiently educated by the qualified teachers. The local authority lost a good part of its grant from the board partly because of the reduced attendance and partly because the qualifications of the teachers were unsatisfactory.

It is clear that although little has been written on the functions of the Board of Education, certain principles emerge from the practice of administration. Primarily in a country in which all kinds of efforts, public and private, are recognized as contributing in various ways to the making of a national system, its function is to coordinate efforts of all kinds, to link up and dovetail and to allocate duties and powers. It sets up and suggests minimum standards and plans and keeps a record of experiments which are watched and encouraged, often with financial aid. It exercises educational leadership not on the basis of theory but rather by collecting and distributing information on the best practice. Through committees appointed by the board, through the consultative committee, and through its special inquiries department reports are made available on educational practices and policy not only in England but abroad.

One result is that legislation in education never runs ahead of practice but almost invariably universalizes an experiment that has already proved itself. Thus it is probable that the age of compulsory attendance will shortly be raised to fifteen for the whole country. In practice a number of local authorities have for some years past already exercised their powers to raise the age limit to fifteen by local by-laws. Another example may be found in the experiments that are being conducted by one local authority for expanding the scope of secondary education by the provision of alternative courses, not now provided for in any scheme of regulations but made possible by the flexibility of the system and the process of conference, discussion, compromise and settlement.

The Board of Education is not, however, the last resort in education. The ultimate power is exercised by Parliament, to which the president of the board is responsible.

What Is the Purpose of Administration?

In the words of an English administrator of long experience administration is the task of shouldering the burdens of the teachers, who "should be set free to educate with as few hindrances as possible, not only to give instruction, but to use their expert knowledge and their intimate acquaintance with the children so as to build up that development, moral, intellectual, and physical, which is the aim of education as a whole, intended to turn out citizens efficient, happy, wise, just and good." Hence the purpose of administration is "to enable the right pupils to receive the right education from the right teachers, at a cost within the means of the state, under conditions that will enable the pupils best to profit by their training."

England thus furnishes the best example of a system of administration based on the principle of freedom and responsibility, a principle that is applied to the relations between the central and the local authorities, and between the local authorities and the schools. Just as this principle of freedom and responsibility is recognized today as the basis of individual growth and development, so in the field of educational administration, it has been the basis of measured progress, slow and not in any way spectacular or sensational, but none the less real and vital.

Index Numbers for School Supply Prices

General indexes of wholesale prices have reached a new low level for the year and there is little probability of an early advance

By HAROLD F. CLARK, Professor of Education, Teachers College, Columbia University, and JOHN GUY FOWLKES, Professor of Education, University of Wisconsin

THE index of school supply prices has registered a slight decline during the past month. The general indexes of wholesale prices have reached a new low level for the entire year. Most of the important items entering into school supply prices have also shown decided price weakness. Most qualities of paper have shown decided weakness in price and no advances are likely to be made in the near future according to present indications.

The general opinion seems to be that there will be no advance in the prices of chemicals, and many items may show actual price recessions. Items of school supplies that are affected by price of textiles should remain fairly constant in price due to the fact that cotton, cotton goods, woolen goods and similar materials have been decidedly weak in price. Most metal prices have been distinctly weak. The same is true of oil, glass and lumber. It should be observed at this time that, although the general market is in a somewhat unsettled condition, according to all available data there is little probability of an early advance in the prices of materials used in schools.

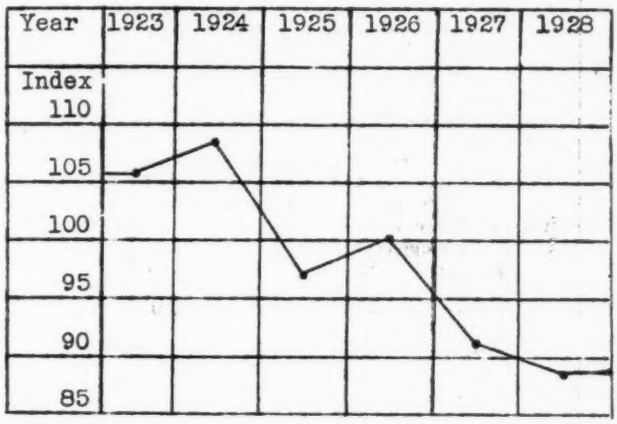


Chart 2. Annual index of the prices of instructional supplies.

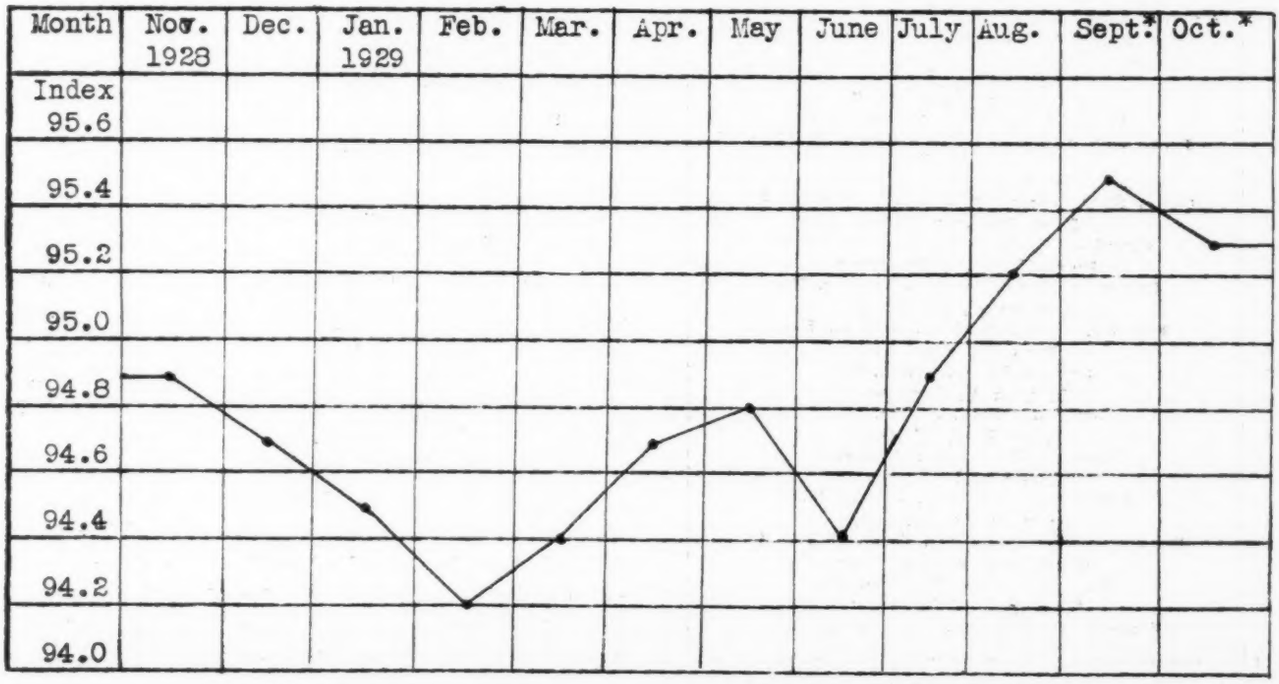


*Chart 1. Monthly index of prices of instructional school supplies. *Not final.*

The NATION'S SCHOOLS

Editor in Chief PROFESSOR M. V. O'SHEA
The University of Wisconsin, Madison, Wis.

Executive Editor JOHN A. MCNAMARA

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Editorials

Secretary Wilbur on a Federal Department of Education

THE Secretary of the Interior has taken a stand against a department of education in the federal government coordinate with other departments. He says that education can be cared for best in one of the existing departments, probably in the Department of the Interior in which the Bureau of Education is now located. His attitude has been disappointing to a large proportion of educators and probably of laymen throughout the country. Certainly the sentiment in favor of a federal department has been growing steadily. Whether or not Secretary Wilbur's pronouncement will postpone the establishment of a department, no one can tell at this moment.

There is a possibility that there is a personal factor involved in the views of the Secretary of the Interior. The Commissioner of Education now derives his authority from the secretary. The commissioner reports to the secretary. He must have his plans approved by the secretary. All publications of the bureau must be sanctioned by the secretary. It is conceivable that the secretary does not relish the idea of losing so important a part of his organization as the Bureau of Education.

It is apparent that Secretary Wilbur wishes to secure the judgment of experienced and thoughtful educators regarding the rôle which the federal government ought to play in education. Secretary Wilbur himself believes that the administration of education should be local and not highly centralized. In order to secure the views of men and women who have been investigating the matter for years, Secretary Wilbur has appointed a general committee on education to advise him regarding the extent to which the federal government should take a hand in the educational work of localities and particularly the extent to which funds should be appropriated by Congress for the maintenance of education or the inauguration of new types of educational work. Secretary Wilbur's committee is composed of educational leaders, most of whom have for years been working for a federal department of education, for the purpose principally of coordinating the educational activities of the government at Washington, and also for the purpose of providing ways and means of

improving the educational work in impoverished sections of the country. If Secretary Wilbur will give this committee a free hand in the study of the questions he has proposed and if he will publish the findings of the committee, we shall have in due course an illuminating treatment of the desirable functions of the federal government in the educational work of the nation.

John Dewey—Educational Leader and Prophet

AMERICAN education owes a great deal to John Dewey. For at least two decades superintendents, principals, supervisors and teachers have all looked to him for guidance and inspiration. Hardly anyone has written on an educational topic for the last twenty or twenty-five years without quoting Dewey. "As John Dewey says" has become a constantly recurring phrase in educational writings.

Dewey started out in life as a psychologist and a philosopher. He did not become interested in the theory or practice of education until he was past middle life. When he did turn his attention to the problem of rearing the young so that they could participate effectively in social life, his acumen placed him at once in the forefront of educational leaders. From the beginning of his educational activity, he has emphasized three conceptions which have now become almost universally accepted in American education—first, that education should not aim to prepare a child for life but should provide opportunities for him to live according to his nature and his needs every moment he is in school and out; second, that the child should be led into an understanding of contemporary social life in some such way as this life has been developed throughout racial history; and third, that the pursuit of special studies in the school will develop special and not general power in the pupil, so that it is psychologically unsound and educationally wasteful to construct curricula for the purpose merely of strengthening or sharpening mental faculties. Multitudes of subordinate problems arise when education is organized with a view to embodying these conceptions and John Dewey has discussed all these problems at one time or another and has dealt with all of them from what might be called a naturalistic point of view.

On October 18 and 19 John Dewey's friends—educational, psychological, and philosophical—gathered at Columbia University to celebrate his seventieth birthday.

We cannot recall any similar testimonial that included tributes from people in so many fields. There does not come to mind any other American who has been generally recognized as a leader in philosophy, psychology and education. Dewey's leadership in education has been due to the fact that he has studied the child and his upbringing from the standpoint of a naturalist. His interpretation of the child's interests, and his suggestions for the effective training of children have appealed to educators in every department of our educational system as sound and practicable. Great numbers of persons in leading educational positions have gone to John Dewey for the past twenty years for his views of curricula and methods adapted to present day needs, and they have come away his apostles, spreading his doctrines throughout the country and putting them into practice.

His influence has not been confined to our own country either. Other countries have invited him to reconstruct their educational work. There is hardly any progressive nation that is not now following to a greater or less extent the educational leadership of John Dewey.

Helping the "Loan Shark"

WE NOTE in one issue of a state teachers' journal two "loan shark" ads. The first reads in part, "The ..... Company, as a testimonial of their belief in the high character and integrity of teachers has provided a special plan whereby you can borrow by mail $50 to $300 at preferred rates on your own personal note without co-signers or collateral. No inquiries are made of your friends, relatives or school board. You may have as many as twenty-five months in which to repay, with the privilege of paying in full at any time—thus reducing the cost. Our special rate for you makes the average cost of a $100 loan only $1.30 per month."

In other words, if you are a teacher these particular leeches will, over a period of two years and one month, rob you of only $20 additional interest over and above ordinary 6 per cent interest.

We have no quarrel with the thieves who are in this business because they are "under state supervision," but it would seem as a matter of ethics that publications going to teachers should not carry advertisements of this kind. A straight narcotic advertisement urging teachers "to form the habit" would not be more devastating.

Some states license "loan sharks" who thrive upon the misfortune of others, but there is no

reason that for the sake of a few paltry dollars the teacher publications should encourage their existence. A magazine's advertisements should be as carefully selected—and edited—as the editorial material, for in this age ads are read with as much interest as articles, and no editor would intentionally lead his readers into such a vicious trap as dealing with a "loan shark."

If there is any disagreement with the logic of this sentiment, we shall expect to see editorials in the next issues of state teachers' journals justifying the "loan shark" and his nefarious practices.

N·S

Formal Discipline in a New Rôle

THE fallacies of the doctrine of formal discipline have received such an airing during the past fifteen years that the doctrine is playing practically no rôle now in determining the material or the method of instruction in either the elementary or the secondary schools of our country, although it lingers still in some of the colleges and universities. It has recently gained a new lease on life but in a peculiar way.

The Mayor of Baltimore declared a few months ago that endurance and stamina were passing out of American life and he thought it was time to train children so that they would be hardy and would resist temptations to soft living. In order to accomplish his purpose, he proposed that children should compete with one another in prolonged sitting on a flagpole. A contest was inaugurated and carried through in Baltimore, with the result that many children vied with each other in remaining at the top of flagpoles for many days and nights. The champion staid on the top of his pole for over ten days and nights continuously. The people of Baltimore gathered around the flagpoles, atop of which sat boys and girls seeking honors for endurance and stamina, and urged the contestants to stick it out to the bitter end.

It does not seem possible that in this day of enlightenment anyone should think that a child could be trained to show endurance and stamina in the performance of duties as a teacher or a lawyer or a physician or an engineer or a clerk or a manufacturer or a farmer or a book agent by sitting on top of a flagpole without intermission for days and nights at a time. Endurance and stamina in daily life involve action, not inactivity. If we need to train pupils at all for persistence in the performance of duties, we should stimulate them so that they will remain on their feet instead of relapsing into the sitting posture too easily. If our young people are inclining dangerously in any direction it is in the way of sitting too much. How the Mayor of Baltimore and his fellow-citizens reasoned that long sitting would train a child for long and enduring action such as is required for success in any enterprise is beyond understanding. Is it not remarkable that the enlightened people of Baltimore cannot see that one may manifest great endurance in playing golf, say, but no endurance whatever in preparing a Latin lesson, or in mowing the lawn, or in cultivating a garden, or in writing a book, or in performing other tasks that are required to be performed in present day American life? One would think that even a layman who had never heard the term "psychology" but who had had some contact with human beings, or who had at least observed his own characteristics, would have become convinced that specific training for endurance and stamina produce only specific and not general benefits except in a negligible degree.

N·S

A Great Educational Venture

THE fourteenth volume of the "Publications of the American and Canadian Committees on Modern Languages" has just come from the press of the Macmillan Company. Other volumes presenting the results of the most extensive educational investigation ever undertaken will follow in due course.

Some readers of The NATION'S SCHOOLS may not have thought of the significance of this tremendous enterprise—the study of the extent to which modern languages are taught in American schools and colleges, the methods of instruction employed and the outcomes. Such an undertaking would have been impossible twenty years ago. Its successful completion shows that there is a new attitude in the world, at least in this part of it, toward debatable educational questions. These volumes on modern languages are all based upon accurately ascertained data and not upon personal opinion, prejudice or bias. The day is certainly passing—maybe it has already gone—when a man or a woman can stand up and make assertions about the benefits of the teaching of modern languages or any other subject, or the best methods of instruction in any field, without first becoming familiar with the facts that have been learned experimentally and statistically.

It is a tribute to the professors of modern languages that they have tackled the teaching of their subject in a scientific spirt, and have not been swayed by preconception growing out of vested interests.

Recent Books on School Law for the Administrator's Library

Dissertations prepared under the direction of Prof. N. L. Engelhardt, Teachers College, Columbia University, make a valuable contribution to a subject that has been greatly neglected in the past

By ARTHUR B. MOEHLMAN, Professor of Administration and Supervision, University of Michigan

ONE of the obvious defects in our training of school executives is the lack of emphasis placed upon the legal principles and practices underlying public-school organization.

Few of the graduate schools of education make adequate legal training a vital part of their curriculum. Occasionally we may find listed a casual course that purports to cover the field of school law. This is usually an elective and is seldom presented by individuals trained in law. One of the reasons for this lack of emphasis may be the absence of literature in the field. Until recently there has been little for the student except the cumbersome and undigested accumulation of state school laws and decisions, extremely difficult for the novice without legal training. Harry R. Trussler's "Essentials of School Law" was one of the first worth while publications. Like many first publications, it has serious limitations.

Interpretative Volume Is Needed

One of the most commendable movements is represented by a series of dissertations developed and planned by Teachers College, Columbia University, under the direction of Prof. N. L. Engelhardt. Five of these significant publications have already been made public and others will follow just as rapidly as candidates for the doctor's degree, with the essential legal training, present themselves. After this series of theses has been completed, it will remain for some gifted individual to correlate these specialized efforts and produce an interpretative volume in school law. Such an undertaking should be developed as a basic book of legal principles already established, followed by an annual digest containing new legal developments and an annotated summary of all court decisions. Whoever attempts this task will be rendering a valuable service to education.

In the meantime, the theses described in this article appear to be among the worth while publications that should comprise part of every superintendent's working library.

The first publication related directly to this series is W.W. Theisen's "The City Superintendent and the Board of Education," published in 1917. No attempt will be made to review it here.

"Rights and Liabilities of Public-School Boards Under Capital Outlay Contracts" by Frank E. Henzlik, 1924, attempts to cover all of the factors related to the elongated title. It is limited specifically to sites and buildings. The right of eminent domain and its delegation to local school corporations is carefully considered in all of its implications. The general problem, as determined by statute enactment and by court interpretation, is given in each instance. Little difference of interpretation is found with respect to the actual use of the right of eminent domain for school purposes, but there does appear to be definite difference of opinion and ruling with respect to the interpretation of the term "school purposes." While some courts still persist in defining it traditionally, the fact that other courts are interpreting "school purposes" widely indicates the legal acceptance of the changing concept of school activity.

Court Decisions Are Cited

The third chapter considers under what conditions school boards may make contracts binding upon the district and discusses the requirements for advertising, for the relation of contractual limits to expressed authority, the validity of contracts and the ability of school boards to bind their successors. The question of the effect of certain implied acts within or without express authority is considered in terms of specific superior court decisions related to this field. Many embarrassments have been caused by unauthorized acts of school board members obviously within general authority but specifically illegal owing to the manner of procedure. This frequently recurring problem is considered in light of decisions and the conclusion is drawn that a board of education may ratify the contracts of its agents that are within its power to make.

The personal liability of directors of school dis-

tricts on contracts is considered at length with plenty of evidence covering all aspects of the case. The general rule is that they are not responsible, but many technical differences arise where the result is not so certain. The information in this chapter, alone, is well worth the price of the publication to board members of small and rural school districts.

The last chapter considers the interpretation of the courts to common clauses and general conditions found in building contracts. Here is a wealth of information and decision covering these practices that will be of decided value to any board member or superintendent when he is considering contractual relations for building purposes. School districts of reasonable size protect themselves in each case by specific reference of their acts to a private or public attorney. There are thousands of districts that appear to consider legal advice a waste of money, and blunder on regardless of the consequences. The reading of this little book might have a wholesome effect upon unintentionally careless school board members.

The only serious fault to be found with this volume is the method of presenting the bibliography on court decisions. In true thesis style they are grouped by chapters in the appendix and mentioned only by title. Considering the limitations of these volumes, it may be said that the fault does not lie with the author but rather with the general policy of size limitation. As presented, the citations may satisfy academic requirements but have little value to the man in the field.

A Study of the Teacher's Contract

Earl William Anderson has performed a valuable service in the analysis of "The Teacher's Contract and Other Legal Phases of Teacher Status." The treatment consists first of an analysis of existing teacher contract forms. These are analyzed with respect to their direct requirements and implications. Representing 427 cities, they offer a good cross section of current practice. The author then proceeds to analyze the rules and regulations of local boards of education with respect to the duties of the teacher. The number of contracts, rules and regulations studied do not coincide. Only eighty-seven cities were considered in the rules and 427 cities in the matter of contracts. There is no attempt to correlate seriously the actual rules and the specific contract based upon those rules. The effectiveness of tie-in between the problem of teachers' contracts and local rules and regulations is thus somewhat weakened.

The third analysis includes the statutory provisions governing the teachers' contract and duties. This section represents the most complete study of the problem. The presentation is considered from the standpoint of contractual stipulations, statutory duties, general laws affecting the legal status and statutory causes for dismissal. The author also finds that constitutional status of the teacher is rare and exercises little actual influence in practice.

The section on the extension of the board of education power through contractual provisions is interesting and worth while. Where specific powers are granted to local boards, there is little possibility of extension. Where the delegated powers are widely permissive or implied, the boards may definitely extend their powers by contract. The remaining two sections are devoted to recent tendencies in legislation affecting teacher status and the optimum legal status of the teacher. The moot question of teacher tenure is considered briefly.

A Valuable Book for School Men

Despite the basic limitations of the extent of the data, this publication is nevertheless extremely valuable to superintendents and board members. It is well written and well organized. Each chapter concludes with a descriptive summary, which gives to the hurried reader easily the content of the chapter.

"The Legal Status of City School Boards" by Grover Cleveland Morehart has already been considered as a single volume in The NATION'S SCHOOLS.[1]

"Legal Limitations on the Rights and Powers of School Boards With Respect to Taxation" is the two-barreled title of Wayne W. Soper's contribution to this series. This supplements Mr. Henzlik's study considered earlier and limits itself to the consideration of taxation as specifically related to current expenditure.

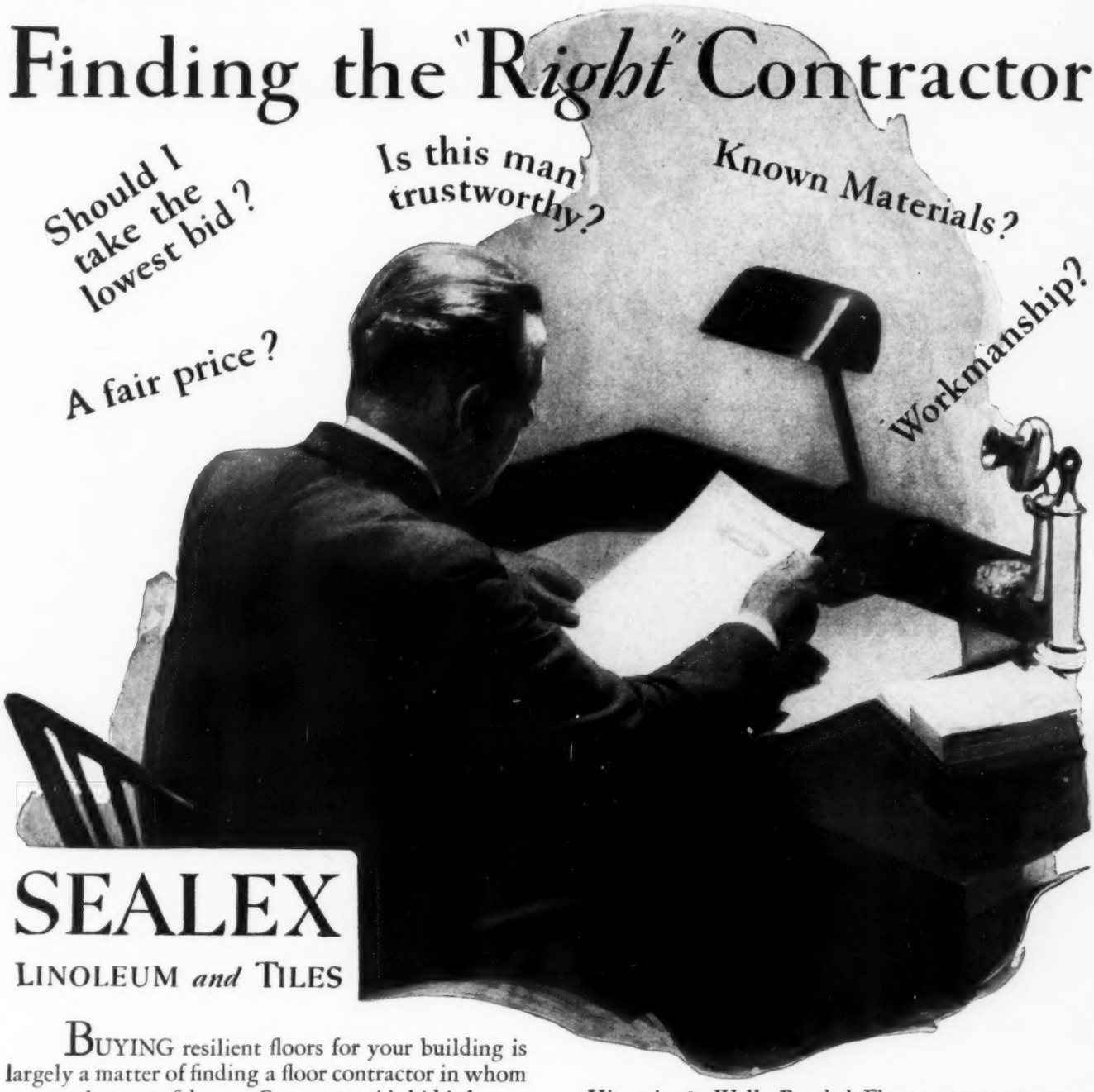
After the traditional academic statement of the problem, he plunges into a discussion of the nature and source of the taxing power. The material here presented is extensive and is supplemented by copious references to court decisions. While the references are presented as footnotes rather than as summarized bibliographical material, the criticism made of previous dissertations holds true here. Citation by title only is of little value to the field executive who does not have the time and the library to delve into extensive study of type cases.[2]

One of the most interesting factors considered

[1] The NATION'S SCHOOLS, July, 1929, pp. 64-65.

[2] It is fully realized that the institutional concept of a dissertation and its relation to practical use are quite different in character. These could be made much more valuable, however, by slight changes in organization.

Finding the "*Right*" Contractor



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is the question of whether authority to tax can be delegated to officers not elected by the people. While the general impression has been held that sovereign power cannot be given to any except direct representatives of the people, Mr. Soper finds that the courts are not in agreement upon this question. In Iowa, Alabama and North Dakota the power to tax cannot be delegated, yet in Minnesota, Maryland and Indiana the contrary view is held. In Illinois and in Pennsylvania appointed boards exercise the power but the validity of the practice has not yet been determined by court decision.

A comprehensive classification is also made of the persons and property that may be taxed and of the place of taxation. This is an invaluable bringing together of material that is frequently required by field executives but to which they have had little access. Persons and property exempt from taxation are next considered and each classification is presented separately, together with adequate authority for the conclusions presented.

The various rules and decisions with respect to the principles pertaining to the levy and assessment of school district taxes are considered in generalized form based upon definite decisions covering these cases. Other major factors presented are the payment and collection of the tax and the rights and remedies of taxpayers. Apart from some slightly irritating peculiarities of style, Mr. Soper's dissertation is extremely valuable. It represents a contribution applicable in every-day public-school activity.

The fifth contribution to this series is Uhlman S. Alexander's "Special Legislation Affecting Public Schools." In this study he traces the origin and growth of legislative control by statutes covering special subjects. For the purposes of his investigation he defines the types of law as follows: "A general law is a law which applies to the whole state; a local law is a law which applies to any political subdivision or subdivisions of the state less than the whole; a special or private law is one which applies to an individual, association or corporation."

Special Legislation in the States

Five states, New York, Pennsylvania, Ohio, North Carolina and Florida, were selected as typical of general practice. The history of special legislation within these areas is carefully traced from the beginning of public education. A "high spot" summary of special legislation in other states supplements the more detailed presentation given for the first five.

It is shown that the influences for special legislation in public education have been similar in all of the states. Early special legislation resulted in a large measure from the inadequate condition of general school laws. They were evidences of meeting the need for rapid growth and change in the earlier developmental stages of public school systems. By these means flexibility was provided.

The weaknesses of special legislation are that these laws have generally been developed in a hit-and-miss fashion to meet specific local needs rather than as an expression of a definite state policy. Whether mandatory or permissive, they did not provide for much flexibility beyond a current need. They showed a tendency to depart specifically from the development of public-school law as a general policy thus preventing flexibility in administrative practice and detail.

Legislation Becomes More General

Mr. Alexander finds that the present tendency with respect to special school legislation is toward a decline both in amount and importance. This practice is being replaced by the enactment of broader and more comprehensive general legislation built around consistent and logical general principles. The tendency is to enact more frequent statutes as a general policy and to permit greater freedom and latitude to the local districts with respect to execution of these laws. In those states that have redrawn their school codes along these lines in recent years, there is little need for special legislative enactment.

The author advocates a wider delegation of administrative and judicial powers to state and local boards of education and to executive officials. He would grant full legislative powers in the interpretation and administration of educational statutes, a distinction between general policy and administrative procedure that has been advocated for some time by thoughtful students of school administration.

Taken as a whole, the dissertations considered here mark an important contribution to the field of legal literature respecting public education. Both the inception of the idea and the plan of carrying it into practice are worthy, and the thanks of the profession are due to Prof. N. L. Engelhardt and to the respective authors for this work.

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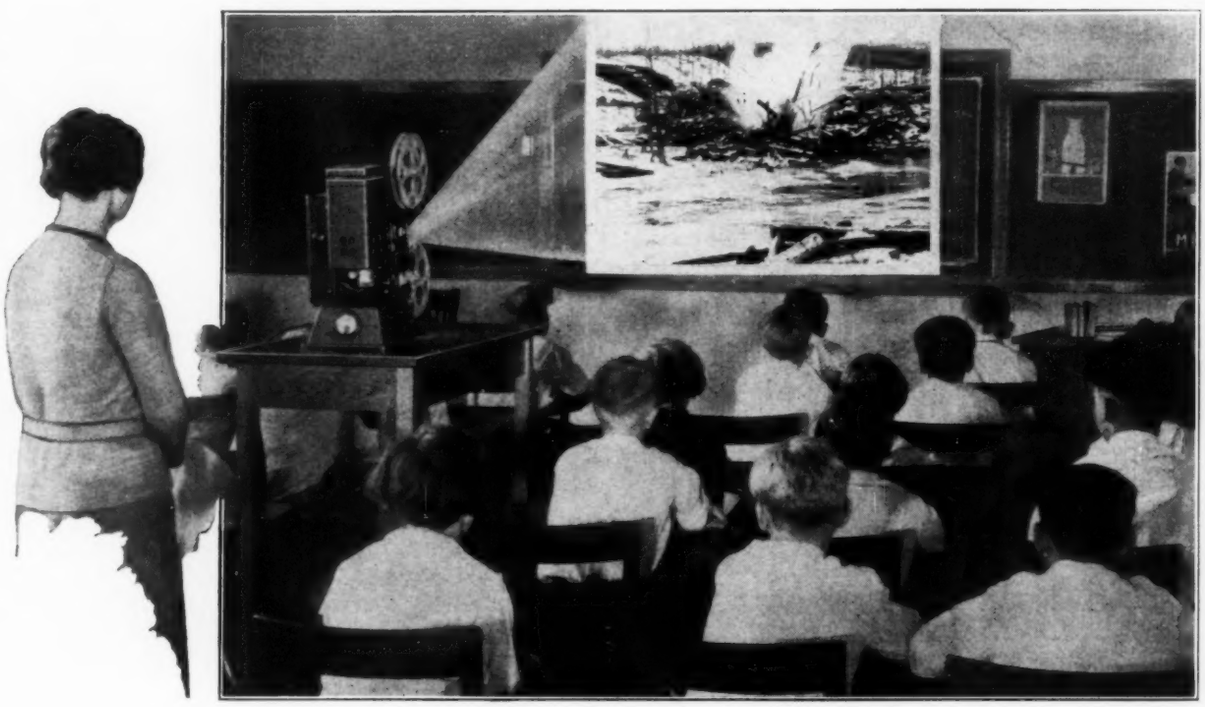
Special Legislation Affecting Public Schools, Uhlman S. Alexander, Teachers College Contributions to Education 353, 1929.

This teacher has a new ally in her work

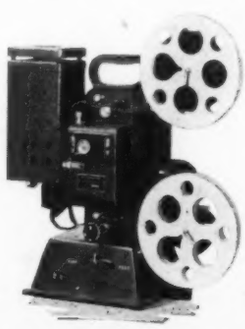


"NEWSPAPERS ARE MADE OF WOOD."

How astounding that idea is to a child! What a wonderful story it makes! And yet the newspaper, moulder of thought and action, is only one of many features of a complex civilization with which children should be familiar if they are to understand present day life.

Words cannot tell this story

How to bring this about? School days are short. No teacher, and no pupil, has time to trace these stories with the spoken or printed word. But *this* teacher has a new ally in her work. She simply steps up to a device near the back of her classroom and turns a switch.



This new ally does it

Immediately the story leaps to life on a silvered screen. Virgin forest, felling of trees, blasting a log jam, floating logs to the mill, pulp-making, paper-making, a press-room—finally the finished newspaper on a metropolitan news stand. All this is unfolded in a motion picture prepared specifically for classroom use.

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Your Every-day Problems

JOHN GUY FOWLKES, THE UNIVERSITY OF WISCONSIN, DIRECTOR

This department will be devoted to an informal discussion of problems arising in the every-day life of principals and superintendents. The following discussions are based on answers to inquiries received recently by the director of this department. Similar inquiries are invited, and should be addressed to Dr. John Guy Fowlkes, Department of Education, University of Wisconsin, Madison, Wisconsin.

The Optimum Size of a Gymnasium and Auditorium

"The board of education is about to design a new senior high school," a letter recently received states. "Questions have arisen about the size of gymnasiums, the seating capacity of the auditorium, the size of the recitation classes and the size of study rooms or classes.

"Please let me know the latest professional data that you have which will indicate the trends in regard to this and the general practice which, in your opinion, is the most desirable.

"The school we are about to build has a capacity of from 1,500 to 2,000 pupils. Probably the question that is receiving the greatest amount of discussion is the seating capacity of the auditorium, some claiming that it should be of a size to seat the entire school population at one time, others claiming that it might be considerably smaller. What is your opinion?"

The following letter was sent in reply:

"Unfortunately, there is no entirely reliable answer to your question. Whether either the auditorium or the gymnasium should be large enough to seat a school population of from 1,500 to 2,000, which you indicate will be the probable enrollment of the school, depends to a large extent upon the use to which such rooms are to be put.

"We are inclined to think that the gymnasium at least should provide a seating capacity for not more than between 70 and 80 per cent of the school enrollment since, from figures available, that is usually the maximum sized audience that will attend any athletic contest. If the auditorium is to be used somewhat as a community hall, which in your city we should think is doubtful, there is some excuse for building the auditorium to seat an audience equal to a larger percentage of the school enrollment than the gymnasium. In your situation, it seems that the best figure for determining the size of both the gymnasium and auditorium would be from 70 to 80 per cent of the school enrollment."

Uses of the Assembly Hall

The following data[1] are based on a questionnaire returned by forty-nine schools located in eight states. The cities are distributed according to population as follows:

Class I—50,000 to 100,000
Class II— 5,000 to 9,999
Class III— 2,500 to 4,999
Class IV—Less than 2,500

The median enrollments in the various groups are as follows:

Class I—550
Class II—400
Class III—300
Class IV—105

Approximately 80 per cent of the schools were four-year high schools. About 50 per cent of the schools had an enrollment of less than 200. The median length of the class period was forty-six minutes, and the median length of the school day, 361 minutes.

According to data furnished by the forty-nine schools reporting on the questionnaire, 90.24 per cent of the schools reported compulsory attendance at all assembly programs. The assembly hall is used 3.7 per cent of the school week—median, 66.77 minutes—for assembly programs.

The greatest benefits to be derived from assembly programs are: their inherent value in developing a good school spirit; their value in integrating the work of the pupils and their value in correlating the classroom work of the pupils.

The largest number of principals in cities of the first, second and fourth class stress the class

[1] These data were supplied by J. B. Wiener, graduate student at the University of Wisconsin in 1927.

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PEERVENT UNITS

UNION HIGH SCHOOL MILWAUKEE, ORE.—16 PEERVENT UNITS
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Each classroom is independently ventilated although it is possible to control all from a central point. This provides service for each room at a cost proportioned to the useful work done.

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studies and extra-curricular programs, whereas those in the third class stress the musical and speaker programs.

A minimum list of equipment for assembly halls should include the following: piano; blackboard; desks or opera chairs or a combination of both; stage; stage curtain; stereopticon; library; portable screens; stage scenery; phonograph; moving picture equipment, such as booth, projectors and screens; box office; bulletin boards; teacher's desk and chair; provision for darkening room.

In addition to this list of equipment, a dressing room for boys and another for girls should be provided. A property room is also necessary.

Large as well as small schools apparently need to pay more attention to equipment for assembly halls. A correlation between the number of items of equipment and school enrollment is +.212.

According to data collected for this study, study hall space is utilized to the fullest extent. The enrollment for study hall ranges from forty-eight to 107. The general practice with respect to the administration of study halls is to use regular classroom teachers for study hall supervison. In schools in cities of less than 50,000 population, a special study hall supervisor is practically unknown. Special study hall supervisors are usually found in schools in cities of 50,000 or more.

The School Janitor

Several inquiries have been made recently concerning the school janitor, including problems of personnel, methods of selection and the supervision and administration of janitor service. A recent inquiry indicating a particular interest in the work of the school janitor was received from South Dakota. The following summary of a study concerning the school janitor in 237 township schools in Indiana,[1] together with a bibliography, may prove helpful.

Administration: A large number of janitors are selected by trustees who do not consult with the school principal. This is an undesirable practice. For the sake of harmony and better service, the principal should have a greater voice in the selection of the school janitor.

The janitor's contract as authorized by the Indiana State Department of Education provides that the supervision of the janitor service shall be under the direction of the township principal. Trustees should make an effort to obtain first-class janitors and make them understand that they are under the direction of, and responsible to the principal.

Only 29.8 per cent of the janitors are employed for the entire year. The arguments are overwhelmingly in favor of year-round employment.

Salaries were found to range from $200 to $1,900. Many janitors receive a meager salary considering that a large majority are serving in schools with a range of 200 to 350 pupils.

With respect to salaries, politics play a minor rôle. In either case, the median salary is too low.

Personnel: The general educational qualifications of the janitors compare favorably with standards in other systems. Seventy-two per cent have completed the eighth grade of the common schools.

A special school for janitors should be maintained each year at the county seat.

Janitors should be given the benefits of indefinite tenure. They should be retained in the system as long as they give satisfactory service.

A certificate of physical fitness should be required.

Supervision: In many schools sweeping is permitted while school is in session. This practice should be forbidden. Floors should be swept at the close of the school day. Furniture and other equipment should be dusted before the opening of school. Dry dusting should not be permitted.

Uniform temperature should be maintained at all times. Experts may disagree as to the proper room temperature because humidity and velocity of air in the rooms must be considered. But there is essential agreement that uniform temperature is necessary for the health of the school child.

Janitors should know definitely what their duties are and should be held responsible for the maintenance of desirable standards.

[1] Wilson, C. E., The School Janitor, M.A. Thesis, 1927, University of Wisconsin.

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What Pennsylvania Taxpayers Pay for Textbooks

It has cost taxpayers of Pennsylvania approximately $1.50 a year during the last eight years to furnish each boy and girl in the public schools with a full set of textbooks, a statistical study in the *Pennsylvania School Journal* shows.

A total of $3,120,447 was spent for textbooks last year, a sum that represents but a fraction over 2 per cent of the general cost of operation of the schools.

A Little Knowledge

is a dangerous thing. And this is true even when applied to the manufacture of cleaners.

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which are preferred in hundreds of schools, are the result of special research and study extending over thirty-five years.

That is why they accomplish such unusual results with an efficiency and economy that does not sacrifice the beauty and attractiveness of equipment and decorations.

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Ask your supply man for "WYANDOTTE"

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Practical School Administration:
Facilitating the Purchase, Storage and Delivery of Supplies*

By PHILIP LOVEJOY, Assistant Superintendent of Schools, Hamtramck, Mich.

THE first part of this study which appeared last month dealt with the techniques of developing a method of tabulation to provide a complete history of the purchase of any individual item and of securing an inventory of individual items in order to facilitate immediate subtraction on the purchase index card.

Technique No. 3 concerns the records necessary to act as transmittal between the central office and the individual schools. This record is the requisition. It is in three colors, yellow, white tissue and pink. This requisition (Diagram 9) is to be made out in accordance with the standards of distribution and the anticipated figures from the child accounting department. It is to be made out for a semester's quantity of supplies. In some cases, as in the art department where the work is seasonal, the school year is taken as the unit. All requisitions are received in the central office in May. Here they are checked against the standards of distribution and anticipated membership and if they are in proper order they are forwarded to the central stock room where they are filled.

The requisition provides a place for the item and the code as well as the quantity. The yellow and pink copies are sent forward while the white copy is retained as a record by the building principal. To reduce the amount of typing necessary, a code that tells the entire story about the item was adopted. Concerning this code it may be explained that the first two numbers tell the fund and activity from which the charge is to be paid, the second set of four numbers tells the exact use of the article and the remaining figures tell just what the article is. The code, therefore, having been established, the clerk has but to write: Paper—12-3124-600. The stock clerk has only to know the last three figures. The 600 for him means mimeograph bond paper, 8½ by 14 inches, 16-lb., based on 17 by 22 inches, wrapped in packages of 500. The requisition is filled in accordance with this information.

BOARD OF EDUCATION
HAMTRAMCK, MICHIGAN

REQUESTED
SUPPLIES
BOOKS
EQUIPMENT

Nº 11155

Emerson SCHOOL DATE October 9 1928

ARTICLE	USE AND CODE			QUANTITY WANTED	✓	COLUMNS FOR USE OF ACCOUNTING DEPT			
	FUND ACTIVITY 12	OBJECT 3124	ITEM 600	QUANTITY UNIT		QUANTITY DELIVERED	SIGNATURE	UNIT PRICE	VALUE
Paper	12	3124	600	100 rms	✓	100	Cmk	.45	45.00
Paper			437	50 rms	✓	50	Cmk	.24	12.00
Erasers			012	6 ea	✓	6	Cmk	.08	.48
									57.98

SIGNED Chas. F. Robinson PRINCIPAL
DATE DELIVERED Oct 15
APPROVED Philip Lovejoy 12-9-24

Diagram 9.

BOARD OF EDUCATION
HAMTRAMCK, MICH.

Nº 7057

PURCHASE OR DELIVERY ORDER

DELIVER TO Bd of Education TO John Jones Grocery
ADDRESS 2380 Wyandotte 987654 Jos. Campau
SHIP VIA truck DATE Oct. 3,1928
SEC COPY TO Miss Brown TERMS 8-10 net 30

QUANTITY	UNIT OF MEASURE	DESCRIPTION	PRICE PER UNIT	AMOUNT
10	cartons	Jim Dandy Matches	.90	9.00
25	lbs	XXX Cane Sugar	.055	1.38

REQ no 6789 cost 12-6126- APPROVED Aug 7 CLASS MX

To the Vendor: Any change in the fulfillment of this order (estimated or otherwise) must at once be reported to the Asst. Superintendent before proceeding further.

All transportation charges are to be prepaid. Mail invoices in duplicate to Board of Education vouchered on the 4th day of delivery. Invoices 5th mail period will not be accepted. Order number must be entered upon invoices. The acceptance of this order does not in any way waive the Board of Education's rights, in case deliveries or damage does not and all costs are to be borne by the vendor.

Philip C. Lovejoy
Assistant Superintendent

This is to certify that there are sufficient funds in the account indicated to cover the cost of the articles or services listed for on this order.

Nina Black
Bookkeeper

Invoice Received Oct 10
Voucher Number 4678 M

Philip Lovejoy
Business Administrator

I hereby certify that the articles specified on this order have been received and that the quantity and quality thereof have been verified with the exception noted.

Nina Black
Bookkeeper

Sign on the line Chas. Brown Date Oct 4
Date Advice Received Oct 3 Date Articles Received Oct 4
Date Articles Inspected Oct 4 Date Advice Forwarded to Bookkeeper Oct 5

Philip Lovejoy
Business Administrator

Diagram 11.

The pricing clerk also needs to know what the 600 is and from her running inventory (Diagram 8) is able to attach a proper price to the requisition. The accountant or bookkeeper needs to

*This article, the first part of which appeared last month, is concluded in this issue.

Another Modern High School Installs SANI-DRI and Permanent Sanitation

The new High School at El Monte, California—a delightfully modern arrangement of group buildings, sheltered terraces, daylight, sunshine and sanitation. Architect: Edwin C. Thorne, Pasadena, California.

Interior view of an El Monte High School washroom, showing its efficient arrangement, with washbowls and SANI-DRI on both sides of a central partition.

the new "SF"

Sani-Dri

"Dries Quicker Than a Towel"

A Faster, More Thorough Drying Service— Plus Years of Sanitation and Savings

The new "SF" SANI-DRI offers many advantages to the modern school. Most important, of course, is the healthful, thorough dry, which protects the skin and prevents chapping. All general washroom conditions are improved when SANI-DRI is installed. It eliminates the litter of paper, banishes soiled towels, provides continuous service and an individual dry for each user. Best of all, it offers these and other advantages while saving from 60% to 90% of old-fashioned towel costs.

The new model SANI-DRI (as pictured in the El Monte washroom above) provides a faster, quieter and more efficient drying service than ever obtained before. Its twelve improvements include a new "all-position" swivel nozzle which allows adults or children of any size to dry quickly and comfortably while standing in a natural position. SANI-DRI has an outer case of genuine porcelain enamel—and a quality of construction that you will welcome as "mischief-proof."

NEW BOOKLET UPON REQUEST All of the twelve new improvements are described in our new booklet "12 Points of Perfection"—Send your name and address and we will forward a copy at once.

Electrical Division, Dept. 11 G

CHICAGO HARDWARE FOUNDRY COMPANY

North Chicago, Illinois

know the rest of the code only. The 600 has no meaning to her because the unit price has been attached. But the rest of the code, 12-3124, means to her that the money is to come from the general maintenance fund for instruction. That is what the 12 stands for. The meaning of 3124 may be translated as follows: The 3 stands for elementary education, the 1 for day school, the 2 for supplies and the 4 for social science. The numbers, 12-3124-600, therefore tell a whole story in themselves. These numbers are made to key into the federal classification. A note should be made that these requisitions when printed are lined in such a way that the typewriter will take them double space without further adjusting.

The right side of the requisition (Diagram 9) gives a place for the stock man to write quantity delivered and the clerk in the building receiving the goods has a place to sign for their receipt. The unit price column and value are to be used by the cost clerk after return from the building. The two copies are always returned, checked against each other, the pink filed as a memorandum of what was delivered and the yellow unit priced and sent forward to the bookkeeper for posting. All posting is done on the twenty-fifth of each month so that the account for the month is known on the first of the subsequent month.

There is one additional procedure that serves to reduce work. Let us take the vocational school as an example.

There is a standard of distribution for equipment in this department. The inventory of equipment has been checked against the standards of distribution. Requisitions have been made out for the balance and forwarded to the assistant superintendent of finance. Here they are checked to see if everything is right. If so, bid sheets (Diagrams 10 and 10-A) are made out, the index of the purchasing card that was illustrated in Diagram 1. When the bids are returned the prices are marked on the index of purchasing cards, according to Diagram 1, and the purchase order is issued with orders to deliver direct to the vocational building. The purchase order, illustrated in Diagram 11, is

Hamtramck Public Schools

DATE: September 17, 29

Request for Bid No. 987

TO: John Doe Paper Company
ADDRESS: 41198 XYZ Street, New York City.

When can you make delivery if you are the successful bidder?

The Hamtramck Board of Education desires to receive bids on the various articles listed below. We believe you are in a position to render this service.

Complete conditions pertaining to bids and purchases are printed on the back of this sheet.

What terms are you quoting in this bid?

Very truly yours,

Assistant Superintendent.

This bid must be returned in a sealed envelope before ..... September 25 1929.

Please mail all bids to 2380 Wyandotte Street, Hamtramck, Michigan. Phone Empire 6225.

Description and Specifications	Reference	Quantity No.	Quantity Unit	Unit Price
Mimeograph Bond Paper. 16 pound on 17 x 22 base 8½ by 14. reams of 500 each ream wrapped and marked.	stock	4678	reams (500)	

We hereby certify that we will furnish the above named articles at the unit price stated within the delivery time allotted and that quality and quantity will be in exact conformance with specifications.

NAME ..... ADDRESS .....
(Please sign each bid sheet)

Diagram 10.

This shows how the 2½" stile on the panels and doors of Marblmetal relieves the flat surface and adds immeasurably to its beauty of design.

Showing a corner section of reception room and interior of one of the booths.

Marblmetal Again Steps Forth from the Crowd

Glowing tributes are constantly being paid to the beauty and fine construction of Marblmetal but none is more fitting than its recent selection as the partition par excellence for a Chicago beauty salon. Finished in delicate orchid, Marblmetal adds immeasurably to the atmosphere of this nationally known Mecca for the elite.

Marblmetal is the most outstanding toilet partition since the introduction of metal in this field. It has all the advantages of marble with none of marble's defects. It will not discolor or crack, and being metal will not absorb odors.

Panels and doors are ¾" thick and insulated with a special material. This gives Marblmetal all the solidity of marble. A continuous 2½" stile around the doors and panels relieves any effect of flat surface. Stile is interlocked and reinforced at each corner. Solidly welded across the mitre, ground and filled.

Marblmetal is outstandingly a toilet partition apart from the crowd. If you are interested in Marblmetal, we will gladly send descriptive literature. Or better still, get in touch with our nearest representative and have him show you a sample.

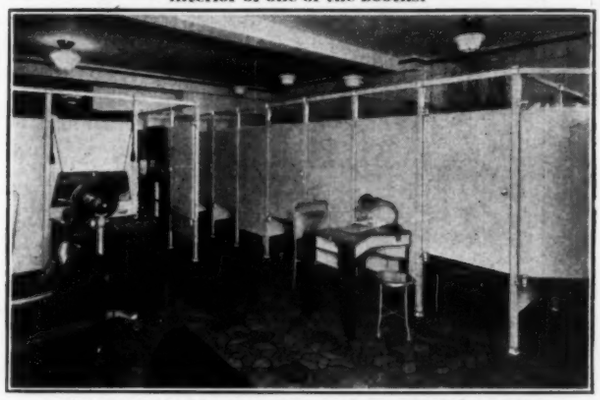
THE MILLS COMPANY

A Mills Metal Partition for Every Purpose

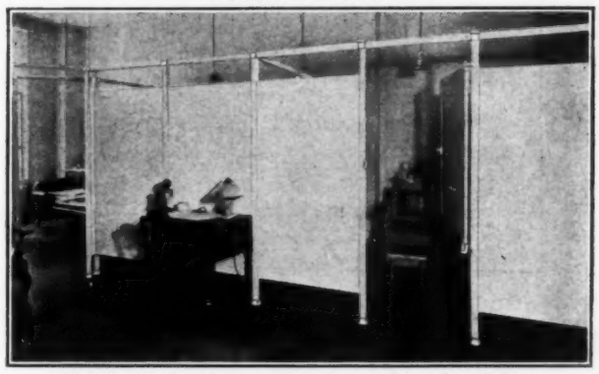
903 WAYSIDE ROAD
CLEVELAND, OHIO

Representatives in All Principal Cities

MARBLMETAL



A study of the harmonious effect afforded by the Marblmetal booths.



Exterior and interior view of row of booths with a glimpse of reception room.

General view of reception room and its beautiful appointments, with Marblmetal booths in background.

HAMTRAMCK PUBLIC SCHOOLS
2380 WYANDOTTE
HAMTRAMCK, MICH.
Bid Conditions

ONE:

All bid prices must be submitted on this blank.

TWO:

All quotations must be F. O. B. board of education stockroom, 2380 Wyandotte St., Hamtramck, Mich. When supplies are shipped from out of Detroit, bidders must state name of cartage company with whom they have arranged to do carting from cars to 2380 Wyandotte St. Where this is neglected the board will have the carting done at expense of the vendor.

THREE:

Delivery must be made within thirty days after receipt of purchase order unless a longer time is specifically provided for and accepted. (See left hand square box.)

FOUR:

Discount terms for cash must be stated. (See right hand square box.)

FIVE:

This bid must be sent in a sealed envelope before the date listed on the reverse side.

SIX:

Bids must be on the article specified unless the words "or equivalent" are inserted; otherwise substitute bids will not be considered.

SEVEN:

Bids must be made out in ink or on typewriter. They must be signed in ink.

EIGHT:

Contracts will be awarded by item. No bid must be contingent on the acceptance of the entire order.

NINE:

All bids are submitted to the board of education at the next subsequent meeting, when the awards will be made.

TEN:

The board reserves the right to reject any or all bids.

ELEVEN:

No bid may be withdrawn prior to the close of the regular meeting of the board of education, next succeeding the opening of the bids.

TWELVE:

Quality of goods—material, supplies, etc.—must be as per sample and specifications and must be acceptable by the superintendent subject to approval by the board of education.

THIRTEEN:

Each sample must be marked with name of vendor and specifically for what it is being submitted. Samples must be delivered free of charge, and those soiled in process or spoiled by examination or test will not be paid for by the board of education.

FOURTEEN:

All cartons and cases are to be marked on the outside stating amount and contents therein and bidder must guarantee count of contents whenever unpacked and counted at the board of education stockroom.

FIFTEEN:

The quantities specified on this sheet are present estimates and are within 85 per cent to 110 per cent of the final qualities to be purchased.

SIXTEEN:

Purchase orders will be issued to successful bidders within thirty days from receipt or bid.

Diagram 10-A.

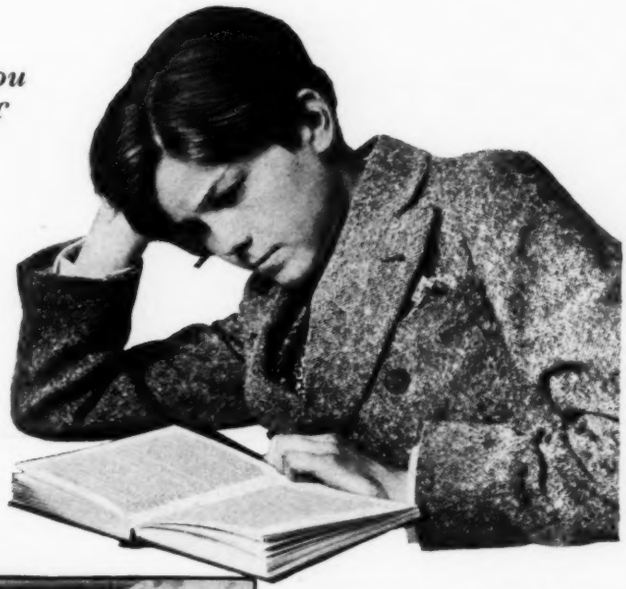
marked in the upper left corner with this caption and the receiving copy of the purchase order in this case is to the director of the vocational building rather than to the stock keeper. The requisitions are marked, "Delivered direct and charged direct." They are of no further value and are filed. The receiving copy of the purchase order (Diagram 11) becomes the proof of delivery and the second copy of the purchase order becomes the basis of posting on the appropriation ledger.

When possible, as in the case of building supplies and equipment, this procedure is used to simplify the work. The ramifications of this procedure are manifold.

All guesswork has been eliminated in this procedure. Exact specifications are listed and exact quantities may be determined. Exact costs may be at hand. Exact inventories are maintained. In other words, guesswork has disappeared from the management of school affairs. These techniques are not presented as being better than any other, but merely to show trends, in an attempt to secure a scientific procedure in the management of school affairs so that the satisfactory instruction of the individual child may be attained.

Now He Likes To Study

He does his lessons well when you protect the quiet friendliness of his school library



There are 9,000 square yards of Armstrong's Linoleum in the beautiful Shortridge High School, Indianapolis, Indiana.

To control the decorative plan of this library, J. Edwin Kopf & Deery, Architects and Engineers, chose this attractive panelled Armstrong Floor.

ENJOY lessons? Yes, it's easy enough if surroundings—at home or in school—are quiet and clean and friendly. It's the sort of atmosphere that parents and teachers constantly seek for school children.

That's why J. Edwin Kopf & Deery, Architects and Engineers, Indianapolis, Indiana, gave special attention to the library in the modern Shortridge High School. They knew this library must be noiseless. They wanted it to look clean—to be clean. They saw the advantage of making it bright, sunlit, and companionable.

So they started by specifying an Armstrong's Linoleum Floor—a very satisfactory beginning; for the floor is the foundation of any decorative plan. You see, this modern floor muffles all foot scrapings and scuffings—even silences the heaviest tread. That's natural since cork is one of the principal linoleum ingredients. For the same reason, this school floor is warm and foot-cushioning.

Even with these advantages in mind, the initial cost of Armstrong's Linoleum is comparatively small. And in its permanence and easy care it is downright economical. With reasonable attention it lasts a decade, or two, even three. Dry or damp mopping and an occasional waxing or lacquering are all that is necessary. There's no spotting or staining since the surface is Accolac-Processed.

When Armstrong's Linoleum is laid by competent workmen over Armstrong's Lining Felt, you have a practically one-piece floor that fits snugly and smoothly. What's more, you're assured of real floor friendliness and cheer because there are scores of patterns to choose from. If you're in doubt as to the most effective floor for your own school library—or for classroom, corridor, cafeteria, offices, board room, or any other school area—our School Service Bureau will gladly offer you recommendations.

This service is explained in "Enduring Floors of Good Taste." And there are other facts about Armstrong Floors that you will need to know. Their beauty—permanence—easy care—quietness—economy—all these advantages, important to schools and colleges, are explained to you. We will be pleased to send you this color-illustrated book on request, free of charge. Armstrong Cork Company, Floor Division, Lancaster, Pa.

Look for the CIRCLE A trade-mark on the burlap back

Armstrong's Linoleum Floors for schools and colleges

PLAIN ~ INLAID ~ EMBOSSED ~ JASPÉ ~ PRINTED ~ ARABESQ ~ ARMSTRONG'S QUAKER RUGS

News of the Month

U. S. Bureau of Education Reorganized

Complete reorganization of the Bureau of Education, which will hereafter be officially known as the Office of Education, Department of the Interior, went into effect October 9, it was stated orally by the Commissioner of Education, William J. Cooper.

The reorganization, as explained by Mr. Cooper, calls for the following major divisions of work: administration, educational research and investigations, publications, library service, educational service, and major educational surveys.

The new designation, Office of Education, Mr. Cooper pointed out, is in fact a reversion to the official name prescribed by the act of March 3, 1869.

The fundamental principle upon which the reorganization has been based is a conception of the Office of Education as a research organization rather than an administrative agency. Under the new organization its policy will be to abandon as far as possible whatever it has been doing in an administrative way and to concentrate upon fact finding, surveys and research in the many fields of education. The chief of its administrative functions of the past has been the supervision of the educational system of Alaska insofar as it applied to the natives. The office will, as far as possible, transfer those administrative functions to other agencies.

The set-up of office work, under the reorganization plan, is as follows: an administrative division under a chief clerk, a division of educational research and investigations under an assistant commissioner, a division of publications under an editor-in-chief, a library division under a librarian, an educational service division under a service chief and a division of major educational surveys under the commissioner himself.

"The Office of Education," said Commissioner Cooper, in explaining the reorganization, "was created for the particular purpose of ascertaining facts about education in the United States, organizing and disseminating these data and conducting researches of value to American schools and colleges."

Woman Appointed as Assistant Commissioner of Education

The Secretary of the Interior, Ray Lyman Wilbur, has announced the appointment of Bess Goodykoontz as assistant commissioner of the Office of Education. For the last five years she has been assistant professor of education in the department of elementary education at the University of Pittsburgh. She began her new duties October 1.

The department's statement in connection with the appointment follows:

"Secretary Wilbur emphasized the importance of this post which ranks but second in the federal government's participation in education. This, it is pointed out also, is the second such post to which a woman has been appointed in the Department of the Interior during the present season. A few weeks ago Mary Stuart was named to the post of assistant director of education in the Office of Indian Affairs.

"Miss Goodykoontz was born in Waukon, Iowa, and attended the public schools there. After finishing high school she taught in the rural schools and city grade schools of Iowa for several years. She graduated from the State University of Iowa and also received a master's degree from that institution. While attending the university she taught in the experimental school for a year and was principal of that school for another year. She has been public school supervisor in Green Bay, Wis., and has taught summer school at Johns Hopkins.

"Miss Goodykoontz is one of the co-authors of the Horn Learn-To-Study Readers. She has done a good deal of editorial work on a number of texts for elementary school use. She has contributed articles on phases of elementary school teaching to educational magazines and has been the co-author of a series of radio talks on phases of children's education which were broadcast last Spring. She is a member of the Phi Beta Kappa and Pi Lambda Theta, national honorary professional fraternities, as well as various national, state, and local educational organizations."

University of California Leads in Property Valuation

The property of the fifty-two land grant colleges in the United States attended by white students is appraised at $427,005,366, according to the associate specialist in higher education, Walter J. Greenleaf, of the Office of Education, Department of the Interior, in a survey that has just been published.

In value of property, the University of California ranks first with $46,300,000, followed by Massachusetts Institute of Technology with $43,600,000, University of Minnesota with $35,840,000, Cornell University with $35,830,000, University of Illinois with $23,300,000, University of Wisconsin with $17,800,000, and Ohio State University with $17,000,000.

More than $1,000,000 is invested in library books in each of the following institutions: University of California, University of Illinois, University of Minnesota, Cornell University and University of Wisconsin. More than $100,000 is invested in livestock in each of the following: Michigan State College, University of Minnesota, University of Nebraska, Oklahoma Agricultural and Mechanical College and Texas Agricultural and Mechanical College.

The campus and farms of Texas Agricultural and Mechanical College cover more than 14,000 acres of land—the most extensive of any land grant college.

Pleasant *Living Conditions*

ADD TO THE PRESTIGE

of the School . . .

This attractive, comfortable bedroom for two students is equipped with Simmons Desk No. 105, Beds No. 16335, Chair No. 105, Wardrobe No. 22033, and Windsor Chair No. 22180

FACULTY . . . students . . . buildings . . . living conditions . . . together they establish the school's reputation. And not the least important factor in adding to the prestige of the school is . . . pleasant homelike living conditions!

When you install the attractively designed Simmons Furniture of metal, you put homelike comfort into the students' bedrooms and dormitories . . . and you do it economically!

No upkeep costs!

The purchase price of Simmons Furniture keeps well within the most limited budget. And, because this furniture never breaks down, it costs you just nothing in maintenance expense! Your first expenditure is the last that you will have to make.

The all-steel construction and Simmons finish makes this furniture splendidly suitable for use in schools. The steel never warps, twists or splits. The durable finishing process safeguards against chipping and staining. Medicines, cosmetics, and drinking glasses leave no mark that cannot be erased with a damp cloth.

There is no fire-risk with Simmons Metal Furniture. No cracks or pores in which dust or vermin can settle. A special feature is the silent sliding drawer construction. Drawers move smoothly, *noiselessly*.

You can obtain this remarkably sturdy furniture in a wide range of handsome designs, finished in gay colors or in wood reproductions. Wide choice assures you of the style you want . . . at the price you want to pay. Teachers are buying Simmons Furniture for home use! Write a letter today for the catalog, to the Simmons Company, Contract Division, 666 Lake Shore Drive, Chicago, Ill.

© 1929, the Simmons Company

SIMMONS

World's largest makers of

BEDS · SPRINGS · MATTRESSES · METAL FURNITURE · [*BUILT FOR SLEEP*]

News of the Month

Fund for Art Building Donated to University of Chicago

Max Epstein, art patron and philanthropist, has presented $1,000,000 to the University of Chicago for the creation of an art center, according to announcement made recently by President Robert Hutchins.

The entire sum is to be spent for the construction of a building located near the new university chapel to form the nucleus of an art development that will serve not only the university community but, as the donor hopes, will be of distinct cultural benefit to the entire Middle West. The purpose of the art center was explained as follows when the gift was announced:

"Through research and study to arrive at a better understanding of the principles of art and its function and place in human life; to teach the history of art and to interpret its meaning; to bring from all countries men eminent in art to lecture and teach; to give facilities to interested friends to lend their art treasures to the institute for exhibit and study; to extend, by bulletin and radio, the benefit of its teachings to the people of the Middle West; to be a fountainhead from which shall flow a deeper and wider interest in and love for all things beautiful."

The new art institute will be part of the university but will be governed by a separate board, one of whose duties will be to obtain money for the institute to carry on its work.

School Inspector Uses Airplane to Visit Remote Districts

The first school inspection trip to be made by airplane was made by a school inspector in the province of Manitoba, Canada, who used an airplane to reach eight of his schools in the remote lake region northeast of Winnipeg, difficult to reach except by boat. He visited all eight schools in two weeks and was able to give them more attention than in the six weeks usually required for the trip.

Harvard Dedicates New Law Hall

Marking the consummation of a campaign for a larger, better equipped law school, the new Langdell Hall of the Harvard Law School was dedicated September 25 with a number of government officials and prominent educationists participating in the program.

The most outstanding feature of the new Langdell Hall, according to an article appearing in *School and Society*, is the reading room. It is 480 feet long, extending the length of the building, and is said to be the largest in the world. In the center of this huge room is a delivery desk twenty-four feet square, with a capacity for 1,600 books within the desk. A book lift connects this desk with the book stacks in the basement.

Money for the new building was raised by means of a general campaign for funds started in March, 1926. Of the sum raised in this campaign about $500,000 was set aside for the general endowment of the library. Another $100,000 was provided for bibliographical assistance and $200,000 for a publication fund. The new building provides for 20,000 shelf units and has stack room for 500,000 volumes. In the midst of these book stacks there are located the thirty-five studies for graduate students and the seventy-eight stalls for undergraduate work in the stacks.

An unusual feature of the new building is a court room on the top floor of the west wing. The court is modeled after the style of the old English courts at Westminster, with the seats for counsel inside the bar on the sides.

Coming Meetings

Arizona State Educational Association.
President, D. M. Hibner.
Secretary, W. T. Machan, principal, Creighton School, Phoenix.
Delegate meeting, December 26-27.

California Teachers Association
President, J. M. Gwinn, superintendent city schools, San Francisco.
Secretary, Roy W. Cloud, 508 Sheldon Building, 461 Market Street, San Francisco.
No general meeting. Bay section, Oakland, December 16-20; central section, Fresno, November 25-27; central coast section, Monterey, December 16-20; southern section, Los Angeles, December 16-20.

Florida Education Association.
President, J. W. Norman, University of Florida, Gainesville.
Secretary, R. J. Longstreet, Daytona Beach.
Annual meeting, Pensacola, November 29-30.

Illinois State Teachers Association.
President, George D. Wham, Carbondale.
Secretary, Robert C. Poore, Carlinville.
Annual meeting, Springfield, December 26-28.

Louisiana Teachers Association.
President, Amy H. Hinrichs, 7336 Irma Street, New Orleans.
Secretary, P. H. Griffith, Box 541, Baton Rouge.
Annual meeting, Alexandria, November 21-23.

Maryland State Teachers Association.
President, Charles W. Sylvester, City Department of Education, Administration Building, Baltimore.
Secretary, Walter H. Davis, principal, high school, Havre de Grace.
Annual meeting, Baltimore, November 29-30.

Montana Education Association.
President, Owen D. Speer, superintendent of schools, Deer Lodge.
Secretary, R. J. Cunningham, Box 217, Helena.
Annual conventions: Bozeman, Great Falls and Miles City.
Delegate assembly, place not determined, December 27-28.

New York State Teachers Association.
President, G. Carl Alverson, superintendent of schools, Syracuse.
Executive secretary, Harlan H. Horner, Box 20, Capitol Station, Albany.
Annual meeting, Syracuse, November 25-26.

Oregon State Teachers Association.
President, John A. Spooner, Holladay Demonstration School, Portland.
Secretary-treasurer, E. F. Carleton, 301 Behnke-Walker Building, 11th and Salmon Streets, Portland.
Annual meeting, Portland, December 26-28.

Pennsylvania State Education Association.
President, C. R. Foster, State Teachers College, Indiana.
Secretary, J. Herbert Kelley, 400 North Third Street, Harrisburg.
Annual meeting, New Castle, December 26-27.

Texas State Teachers Association.
President, Rush M. Caldwell, 2527 Ross Avenue, Dallas.
Secretary, R. T. Ellis, 708 Neil P. Anderson Building, Fort Worth.
Annual meeting, Dallas, November 28-30.

Virginia Education Association.
President, R. W. House, principal of schools, Prospect.
Secretary, Cornelius J. Heatwole, Room 1, State Capitol, Richmond.
Annual meeting, Richmond, November 27-30.

Buildings along McKinlock Campus, Northwestern University, Chicago, Ill

At Northwestern University · ·
Interiors are lastingly CLEAN~ LIGHT~HANDSOME

DIRT, smudges, fingermarks can not permanently mar the beauty of walls and woodwork in these university buildings. For Northwestern paints with Barreled Sunlight—as do hundreds of other fine schools.

Flawlessly smooth, nonporous, Barreled Sunlight can not hold dirt embedded. It washes like tile and is so durable that it may be cleaned again and again, without noticeable effect on its original finish.

Barreled Sunlight is unusually handsome, too. It has an exquisite texture, and a rich depth peculiar to itself.

And with all its advantages Barreled Sunlight not only costs less per gallon than most enamels, but effects further economies through its remarkable spreading and covering powers and its labor-saving ease of application.

Guaranteed to remain white longer than any gloss paint or enamel, domestic or foreign, applied under the same conditions.

Full Gloss, Semi-Gloss and Flat. In cans from ½ pint to 5 gallons, and in 30- and 55-gallon churn-equipped steel drums. For priming use Barreled Sunlight Undercoat first. See coupon below.

U. S. Gutta Percha Paint Co., 47-K Dudley Street, Providence, R.I. Branches: New York — Chicago — San Francisco. Distributors in all principal cities.

Easily Tinted

Any desired shade is obtained by simply mixing ordinary colors in oil with Barreled Sunlight white — or by using the handy tubes of Barreled Sunlight Tinting Colors, now available in two sizes.

Quantities of five gallons or over are tinted to order at the factory without extra charge.

Barreled Sunlight
Reg. U. S. Pat. Off.

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News of the Month

Henry Ford's Old School Becomes Part of Historical Village

The old school that Henry Ford attended as a boy has been made a part of the school system of Dearborn, Mich., and thirty-two pupils have taken their places at the desks occupied fifty years ago by the sons and daughters of the farmers of Dearborn township, according to the *Michigan Education Journal*. The school, which formerly was outside the Dearborn township, has been removed intact by Mr. Ford to his historical village in Dearborn where everything will shortly be as it was in the early days. The pupils are taken to and from the school daily in a motor bus provided by Mr. Ford.

The pupils took part in a special program that was one of the interesting features of the program given when President Hoover visited Dearborn on October 21.

Seattle High Schools Offer Marine Course

The high schools of Seattle, Washington, are offering a marine course this year patterned after the marine instruction given at the University of Washington but in junior preparatory form.

The course in navigation was planned in view of the maritime character of Puget Sound cities and is expected to become one of the most popular studies in the schools.

Bulletin Presents Educational Statistics for Honduras

School statistics published recently in the Bulletin of the Pan-American Union present interesting educational figures from the Republic of Honduras.

In 1928 the republic contained 1,055 primary schools, eighty-one more than in 1927, with 1,355 teachers and 38,725 pupils. There were twelve schools for secondary instruction, with 398 pupils. Other educational institutions listed included the following: normal schools and normal departments, 318 students, of whom 119 received scholarships; a business school with 368 students; a university, including schools of engineering, law and medicine, with 134 students, and a vocational school for young women with 362 students.

British Government Increases Compulsory School Age

The British government proposes to increase the age of compulsory school attendance from 14 years to 15 years, effective April 1, 1931, according to the Bureau of Labor Statistics of the Department of Labor.

Estimates place the prospective increased school attendance at about 500,000 as a result of the change. The plan is expected to have a direct bearing on the British unemployment situation by keeping children in school a year longer than heretofore.

A statement on the subject, appearing in the September issue of the *Monthly Labor Review*, follows:

"On July 18, in reply to a number of questions in Parliament, Sir Charles Trevelyan, the minister of education, made the following statement concerning the age of compulsory school attendance, which is at present 14:

" 'His Majesty's Government has carefully considered the most suitable date for the raising of the school age to 15. After weighing all the circumstances, it has decided to prepare the necessary legislation to raise the school age to 15 as from April 1, 1931.

" 'I am at once asking representatives of the local education authorities and professional bodies to meet me with a view to consultation and cooperation. Consideration is being given to the form and amount of maintenance allowances to be granted, but I can make no announcement at present.'

"The proposed change was announced thus early in order that the local authorities, who are at present preparing their financial programs for the next three years, might include provisions for the increased attendance which is involved in the plan.

"The change is looked upon as highly important for several reasons. It not only means an improvement in the educational opportunity given every child, but has a direct bearing upon unemployment.

"Keeping the children in school a year longer will decrease the supply of young workers, and thus, it is hoped, throw more work to adults, and providing schoolroom and class instruction for them will require additional buildings and additional teaching staff. It is estimated that the move will mean an increase of approximately half a million in the number attending school.

"As in many places both schools and classes are already overcrowded, the need for new buildings becomes immediate and pressing, a fact of importance in view of the acute unemployment in the building trades."

Albanian King Donates Land for American College

For the foundation of an American college King Zogu of Albania has donated 300 acres of arable land and eighty acres of wooded land between Durazzo and Kavaya, overlooking the Adriatic Sea, according to a recent issue of *School and Society*.

The college will be supported partly by American Methodist church interests and partly by the Albanian government, it is announced. The faculty will be paid largely by Duke University of North Carolina. Besides admitting young men and women for classical instruction, it will train Albanian teachers in American methods of instruction.

King Zogu also presented to Charles C. Hart, the American minister, 650 acres of arable land at Tirana, 4,000 feet above the valley, for use by an American industrial school, sponsored and supported by the Junior American Red Cross.

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News of the Month

Chicago Trustee Demands Apology to William McAndrew

The board of education of Chicago will apologize to William McAndrew, former superintendent of the Chicago public schools, whom the board ousted on charges of unAmericanism after a six months' trial, if a resolution presented by Trustee James Mullenbach is passed, according to news stories in the Chicago daily newspapers. The resolution it is pointed out may play an important part in the suit brought by Mr. McAndrew to reverse the board's findings. The suit is to be heard on November 18. The resolution further demands that the school officials apologize to the city for having wasted taxpayers' money in the conduct of the trial.

The resolution, predicated on the public retraction made by John J. Gorman, former congressman, a principal witness at the trial, to Prof. David Saville Muzzey, historian, Columbia University, was referred by the board to the committee of the whole, but it is believed that attorneys for Mr. McAndrew will take advantage of the latest development in the case in urging their client's cause.

Mr. Gorman's retraction was in settlement of a $100,000 suit brought by Professor Muzzey against him. The resolution denounces Mr. Gorman's admission that he had not read the history textbooks attacked during the trial as being unAmerican and that he had not prepared the testimony he had submitted as his own at the McAndrew trial.

The resolution further demands that appropriate apologies be made to Prof. Charles H. Judd and Prof. Charles E. Merriam of the University of Chicago and that the attention of the state's attorney and the Chicago Bar Association be called to Mr. Gorman's actions.

In reply to the charges made in the resolution Mr. Gorman said: "The apology and the charge are foolish. My statements with the exception of very few were true. Those few were misrepresented to me. I made more than 300 statements before the board, and the retraction that I made was based on but half a dozen of the total. The information that I gave was received from others. There has never been any attack on my report or the truth of the statements. The resolution takes it for granted that mine was the only testimony that counted for anything, where in reality there were dozens of others who were heard."

Noted Educators to Make Nationwide Survey of High Schools

The appointment of a consulting committee of nine that will assist the Commissioner of Education in the direction of a nationwide study of high schools, junior high schools and junior colleges has been announced by Secretary of the Interior Ray Lyman Wilbur. The last congress authorized such a study to be made over a period of three years and appropriated $50,000 for the current fiscal year.

Under the present plans the director of the survey will be the Commissioner of Education. He will be assisted by this committee of nine members, all of whom will receive actual and necessary traveling expenses only. Their services at such meetings as are necessary will be offered without charge to the United States. A number of specialists will be called to Washington for short periods to assist in interpreting the data that are gathered. The chief of this group, who will be associate director of the survey, is Dr. Leonard V. Koos of the University of Chicago.

The members of the consulting committee are: H. V. Church, principal, Township High School, Cicero, Ill., and secretary, Department of Secondary School Principals, National Education Association; Elwood P. Cubberley, dean, School of Education, Leland Stanford Junior University, Stanford University, Calif.; James B. Edmonson, dean, School of Education, University of Michigan, Ann Arbor; Charles H. Judd, director, School of Education, University of Chicago; Charles R. Mann, director, American Council on Education, Washington, D. C.; A. B. Meredith, commissioner of education, state of Connecticut, Hartford; John K. Norton, director of research, National Education Association, Washington, D. C.; Joseph Roemer, professor of secondary education, University of Florida, Gainesville; William F. Russell, dean, Teachers College, Columbia University.

Relationship of the Government to Education to Be Studied

The National Advisory Committee on Education ended its conference October 15 by agreeing upon general policies of studying the relationship of the government to the whole aspect of education and by setting up machinery to make such a study possible.

The executive committee was instructed to request the Secretary of the Interior to make arrangements whereby proper authority may be given the advisory committee to obtain from various federal agencies dealing with education such information as bears upon its investigations.

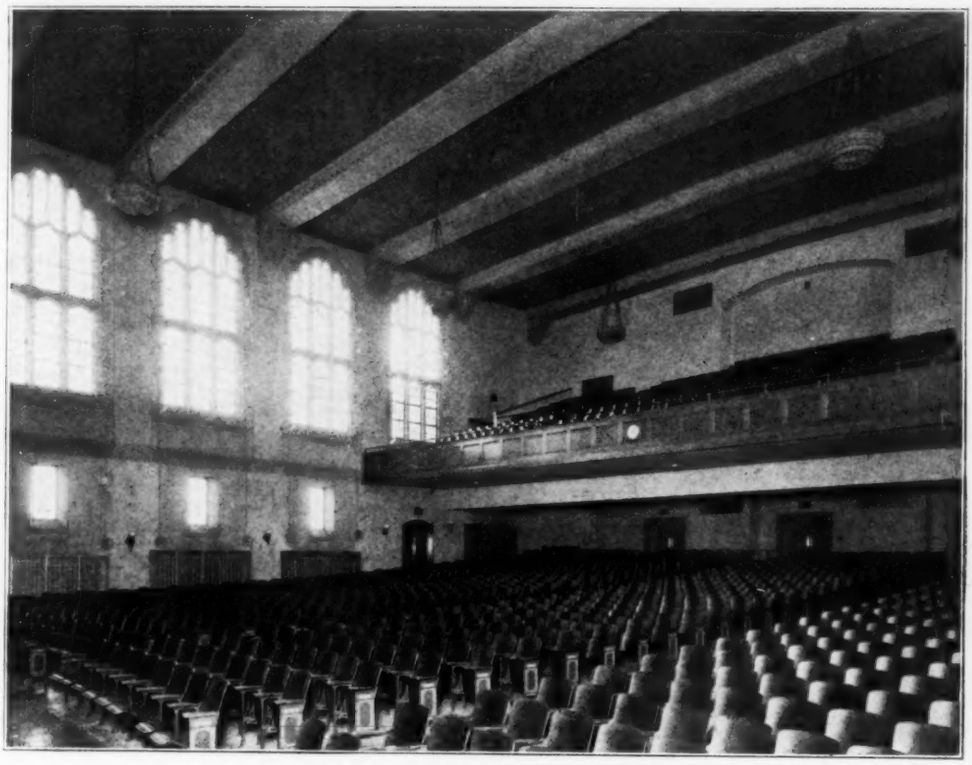
It was agreed that the Secretary of the Interior be requested to devise some way in which the committee can employ full-time experts to make investigations for short periods.

The subcommittee outlined to the conference that it would seek information on child welfare, home economics. the R. O. T. C., the C. M. T. C., national education, the District of Columbia, the library, research in general, commercial education and radio.

Doctor Willoughby and Doctor Strayer, who have been making an analysis of the educational functions of the government, were instructed to continue their study and report upon it as soon as possible. This committee was further instructed to invite the National Education Association and the Land Grant College Association to appoint conference committees, respectively, with whom the National Committee on Education may confer.

Controversial points submitted to the sub-committees, it was agreed, should be dealt with by them and their conclusions presented later.

Before adjournment, April 28, 1930 was agreed upon as the tentative date for the next meeting of the entire committee.



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In the Educational Field

HERBERT G. MEANS, high-school principal and supervising principal of schools, North Braddock, Pa., for the past eleven years, has resigned to accept the superintendency of the East Liverpool, Ohio, schools. F. DEWITT ZUERNER, a teacher in the North Braddock High School for eight years, has been chosen to succeed MR. MEANS as supervising principal.

E. P. THOMAS has been chosen superintendent of schools at Redondo Beach, Calif., succeeding J. B. POTTER.

S. A. DENISON is the new superintendent of schools at Glen Ellyn, Ill.

R. M. ROBINSON, South Beloit, Kan., has been elected superintendent of schools at Kewanee, Ill.

PAUL C. BOETHEL has been elected superintendent of schools at Hallettsville, Tex.

W. T. DONAHO has been elected superintendent of schools at Cotulla, Tex.

SIDNEY M. BLISS, superintendent of schools, Camden, Ohio, has accepted the superintendency of the Bosworth, Ohio, schools this Fall.

C. E. MCCORKLE, superintendent of schools, Kenmore, Ohio, has been elected superintendent of schools at Morgantown, W. Va. Annexation of Kenmore to the Akron school system automatically eliminated DOCTOR MCCORKLE'S position there.

MARK V. WHEELER has been chosen as head of the public schools at Paint Rock, Tex.

HOWARD TEASDALE, assistant principal of the high school, Almond, Wis., has been elected superintendent of schools for Lafayette County, Wis.

PAUL M. MARSHALL, superintendent of schools, Eldon, Mo., has accepted the principalship of the Jarrett Junior High School, Springfield, Mo., succeeding G. G. ELY, resigned.

L. D. LEEPER, superintendent of schools, Linneus, Mo., has resigned. He is succeeded by W. R. HENRY, Milan, Mo.

C. A. STROZIER has been elected superintendent of schools at Newkirk, Okla.

JOHN DIETRICH, superintendent of schools, Helena, Mont., for the past nineteen years, has resigned. He will be retained in an advisory capacity.

C. R. STACEY has resigned the school superintendency at Webster, Mass., and will be succeeded by JAMES A. LOBBAN, formerly a principal in Webster. MR. STACEY becomes superintendent of schools at Brewster, Mass.

F. R. RICHARDSON, superintendent of schools, Spencer, N. C., has resigned to become superintendent at Marion, N. C., succeeding C. W. E. PITTMAN.

C. F. WHITMER, Sikeston, Mo., has been elected superintendent of schools at Elkland, Mo.

LEO B. BAISDEN, superintendent of schools, Longview, Wash., has been appointed assistant superintendent in charge of elementary schools and health and physical education at Sacramenta, Calif. The Longview superintendency will be filled by E. J. MCNAMARA, formerly superintendent at Mt. Vernon, Washington.

GUY C. MOSES has been elected superintendent of schools at Junction, Tex.

B. F. TUNNELL, superintendent of schools, Lewisville, Tex., has resigned to become head of the schools at Matador, Tex.

FREDERICK ARCHER, formerly superintendent of schools, Greensboro, N. C., has resigned to become deputy superintendent at Louisville, Ky.

TRUMAN JONES has been elected superintendent of schools at Berry Hill, Tex.

HERBERT S. WEET, superintendent of schools, Rochester, N. Y., has been granted a six months' leave of absence because of illness. He and Mrs. Weet will tour Europe. During Doctor Weet's absence DR. JOSEPH T. O'HERN, for the last sixteen years assistant superintendent of schools, has been named deputy superintendent to head the schools.

JOHN T. KAEMMERLEN has been appointed superintendent of schools at Catskill, N. Y., succeeding EDWARD D. MYERS.

SHERMAN L. HOWE, superintendent of schools of the city district of Corning, N. Y., for the past seven years, has resigned and will take up a course of study at Colgate University for the coming year, dealing especially in methods of applying psychological principles in the realm of education and teaching. WILLIAM E. SEVERN, vice-principal, Corning Free Academy, last year, has been appointed superintendent to succeed MR. HOWE.

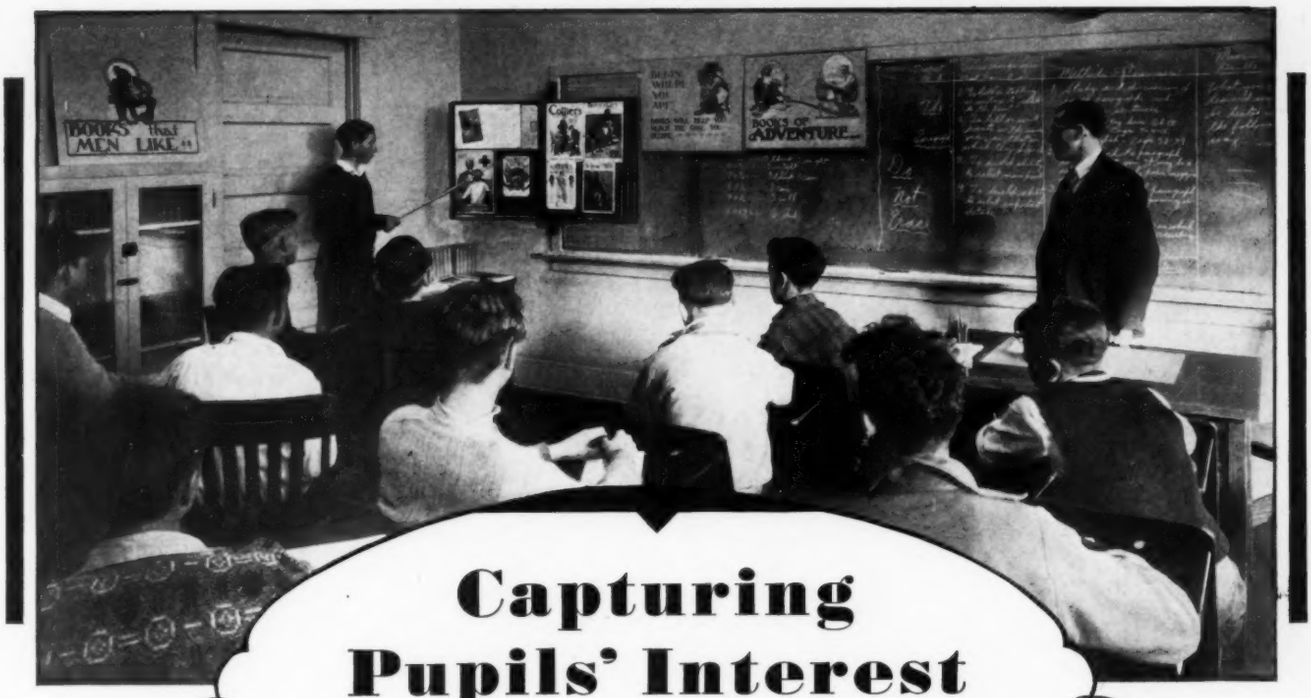
MRS. EDITH BURBANK, a teacher at Wellesley Hills, Mass., for the past several years, has been named superintendent of the Austine Institution, Brattleboro, Vt., to succeed MRS. LAWRENCE EDWARDS, resigned because of ill health.

JOSIAH S. MCCANN, superintendent of schools, Orange, Mass., for the last ten years, resigned recently to become head of the St. Albans city and Fairfield school systems.

DR. WILLIAM C. MCGINNIS, Arlington, Mass., has been appointed assistant superintendent of schools at Perth Amboy, N. J. On January 27, 1930, DR. MCGINNIS automatically will become superintendent when SAMUEL E. SHULL is retired under the law.

DR. EDWARD F. BUCHNER, professor of education, Johns Hopkins University, and director of the College for Teachers, died recently at Munich, Germany. DOCTOR BUCHNER organized the department of education at Hopkins and prior to that had been professor of education at the University of Alabama.

FRED KELLER has been elected superintendent of schools at Mound City, Mo. He taught in the Norborne, Mo., schools last year.



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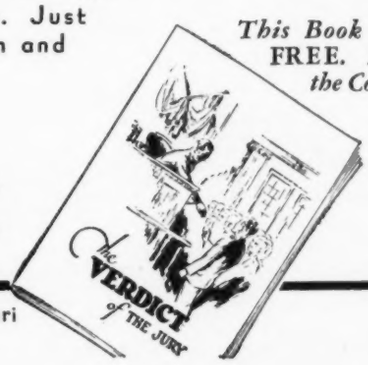

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In the Educational Field

R. E. STONE, Delaware, Ohio, has been elected superintendent of schools at Yellow Springs, Ohio. He succeeds NINDE WILDER, superintendent for the last two years, who recently resigned to accept a position in Chicago.

JOHN SHAW, principal of the high school, Paris, Ky., has been elected superintendent of the Marysville schools. He succeeds JOHN HOWARD PAYNE, who resigned to accept the presidency of the Eastern District State School, Morehead, Ky.

W. STEWART FITZGERALD, Princess Anne, Md., has been chosen county superintendent of schools for Somerset County, Md. He succeeds E. W. PRUITT, who resigned to become superintendent of the Talbot County schools.

DR. DREW T. HARTHORN, principal of Coburn Classical Institute, Portland, Me., for the last seventeen years, has resigned. GUY R. WHITTEN, treasurer of the school, has been chosen acting principal and will be assisted by MRS. WHITTEN until the trustees elect a new principal.

WALTER E. ANDREWS, head master of the Sumner High School, Holbrook, Mass., for five years, died recently at his summer estate at Wolfboro, N. H., where he had gone to live following his retirement from school work. Prior to becoming head master of the Sumner High School MR. ANDREWS was principal of the high school at Hingham for eight years.

MARGARET LOVE PORTER has been chosen principal of St. Anne's school for girls, Charlottesville, Va. MISS PORTER has had a wide range of teaching experience, having been head of the history department at Miss Bennett's School, Millbrook, N. Y.; principal of the Professional Children's School, New York City; supervisor of the training department, State Normal School, New Britain, Conn., and adviser to the lower school at the Winsow School, Boston's largest private school for girls.

T. A. GULLETT, fifty-four years old, principal of the Austin High School, Austin, Tex., died recently. MR. GULLETT was prominent in Texas educational circles and prior to going to Austin had served as a teacher at Cuero in 1896, superintendent of schools at Yorktown and at Floresville, principal of Coronal Institute and later dean of San Marcos Baptist Academy.

STUART E. PRUTZMAN has been elected superintendent of schools for Carbon County, Pa. He fills the vacancy caused by the death of JAMES J. BEVAN. Prior to accepting the superintendency MR. PRUTZMAN served as teacher, principal, and supervising principal in the East Mauch Chunk schools, Pa.

JAMES C. AMBLER, superintendent of schools, Fauquier County, Va., for the past six years, has resigned to enter business.

JAMES D. STOVER, superintendent of schools, Wyoming, Ohio, for the past eight years, has resigned to become assistant superintendent of the Cincinnati schools. He is succeeded by ELWOOD P. REEVE. MR. STOVER has taken up the work of EDWARD D. ROBERTS, who has become superintendent succeeding RANDALL J. CONDON, retired.

RALPH BROEDE, superintendent of the Lykens Consolidated School, Ohio, for the past seven years, is now head of the Wyandot County schools.

W. G. BAHNER, formerly superintendent at Pleasant Hill, Ohio, is now assistant superintendent of the Cuyahoga County schools. He is succeeded at Pleasant Hill by EARL WELSHIMER.

HAROLD EIBELING, formerly principal, is now superintendent of the Liberty Township Centralized School, Hancock County, Ohio.

W. H. VANDERVERE, former assistant superintendent of the Montgomery County schools, Ohio, is superintendent at Farmersville, Ohio, this year.

A. R. BETZ, superintendent of schools at Eaton, Ohio, the past three years, has resigned to become an instructor in the Thomas Edison School, Cleveland.

VICTOR WILSON has resigned as principal of the Monon, Ind., schools to accept a position with a publishing firm.

LESLIE CANUP, formerly of the faculty of Jefferson Township, Logan County, Ohio, is now superintendent of the Middleburg schools, Ohio.

G. B. KAPPELMAN, principal of the Miltonvale Rural High School, Kan., for the past seven years, has resigned to become superintendent at Smith Center.

WALTER M. WALLACK has resigned the superintendency of the schools of Girard, Kan., to accept a position in the island of Haiti.

GERTRUDE WALL has resigned her position as superintendent of schools, Cloud County, Kan., because of illness. She is succeeded by HARRIETT C. WOOD.

WILLIAM E. DIAL is now superintendent of schools at Hewins, Kan., succeeding CHARLES D. MORGAN.

WALDO MCCORT, former principal of the Attica High School, Attica, Kan., is now superintendent of schools in that city.

MRS. MINNIE D. BEAN, formerly assistant superintendent of schools, Tacoma, Washington, has resigned to accept the position of state rural-school supervisor in the state department of education. She is succeeded by MRS. MARGARET CRAIG CURRAN, director of the teachers' service division of the State Normal College, Dillon, Mont., for the past ten years.

WORTH MCCLURE, superintendent of schools, Seattle, Washington, has been appointed professor of elementary-school administration, State Teachers College, Buffalo, N. Y.

MAY TRUMPER, state superintendent of schools, Montana, for twelve years, has been appointed head of the department of rural education opened this autumn at the New York State Normal School at Geneseo.

E. A. O'DELL, formerly superintendent of schools, Jerseyville, Ind., has joined the faculty of Indiana University.

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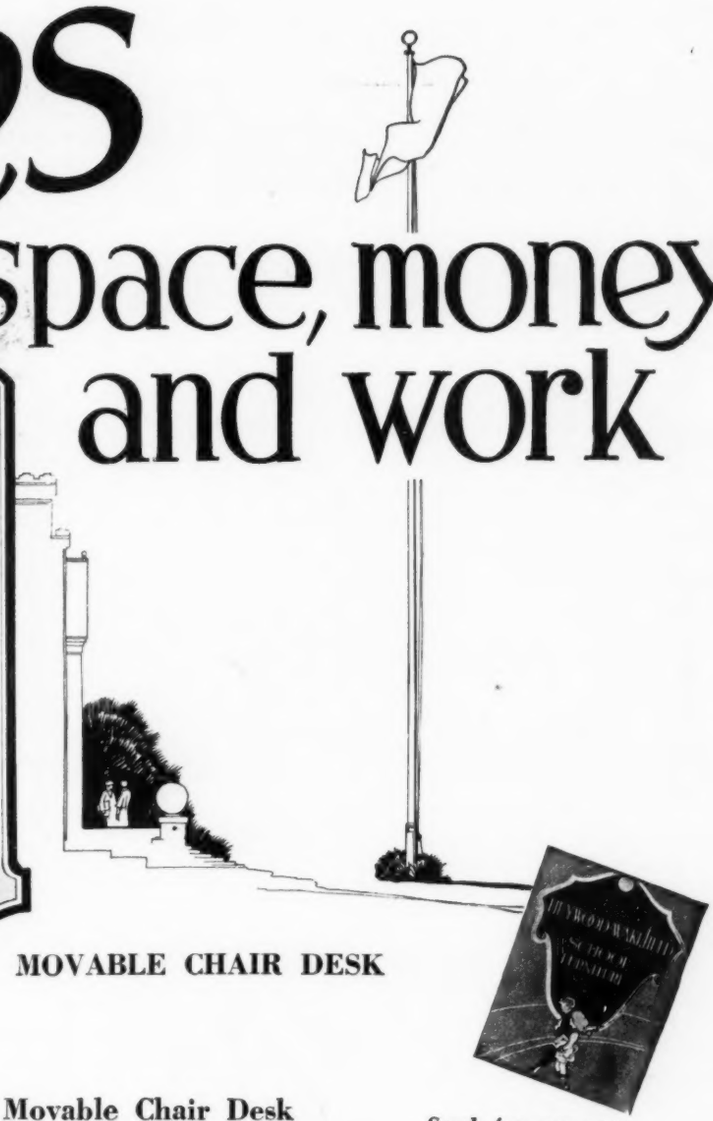

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We match the finish of your other doors. Thousands of Hamlin Sound-Proof Doors in prominent buildings all over America. *Write for Catalog and details.*

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Manufacturers of Sound-Proof Doors and Folding Partitions

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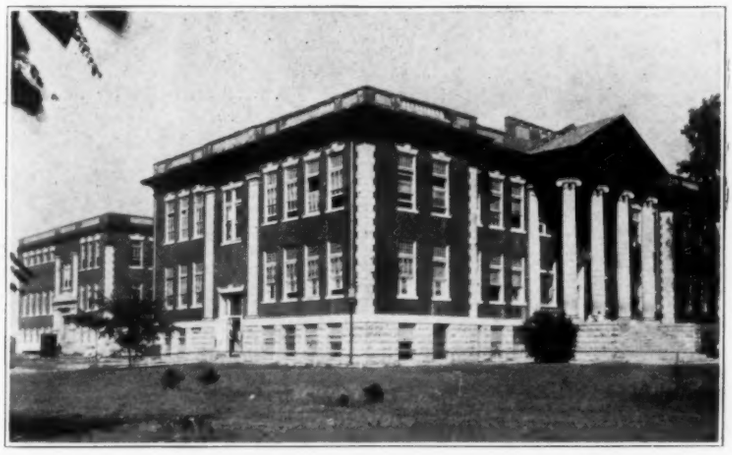
The Dunham Differential Vacuum Heating System

provides most agreeable warmth and a full measure of economy for this fine Dewey, Okla., Grade and High School

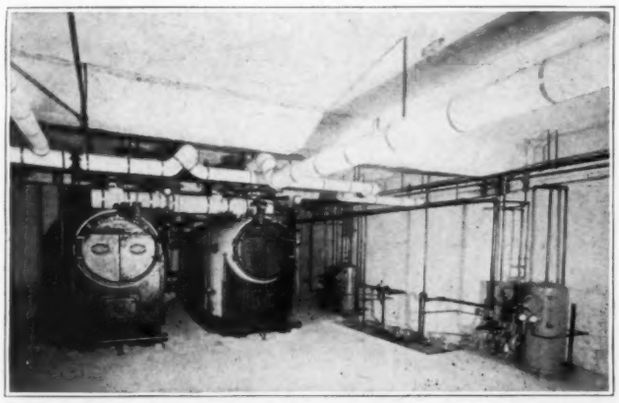


DEWEY GRADE AND HIGH SCHOOL
DEWEY, OKLAHOMA

Consulting Engineer: Fred J. Sellers, Independence, Kas.
Heating Contractor: Sell Orr Heating Co.

The city of Dewey, Oklahoma, is fortunate indeed in having a fine Grade and High School such as this. It reflects an alert, progressive public spirit that such a structure should be erected for the educational needs of the community. The heating system of the Dewey School is a Dunham Differential Vacuum System. It provides an agreeable warmth, without overheating in mild weather, and all the heat necessary to thoroughly warm every room during the cold days of winter. Only a Dunham Differential Vacuum Heating System will accomplish this with a fuel saving of 25 to 40%, for no other system of heating utilizes to the fullest extent the economies of Sub-Atmospheric (low temperature) Steam.

The Dewey Grade and High School has approximately 12,000 sq. ft. of radiation. Two Dunham Vacuum Pumps, installed in the boiler room, are shown in the small illustration.



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Over eighty sales offices in the United States, Canada and the United Kingdom bring Dunham Heating Service as close to you as your telephone. Consult your telephone directory for the address of our office in your city. An engineer will counsel with you on any project.

The Dunham Differential Vacuum Heating System and individual parts of the apparatus used in that system are fully protected by United States Patents Nos. 1,727,965, 1,644,114, and 1,706,401, and Canadian Patents Nos. 282,193, 282,194, 282,195. Additional patents in the United States, Canada and foreign countries are now pending.

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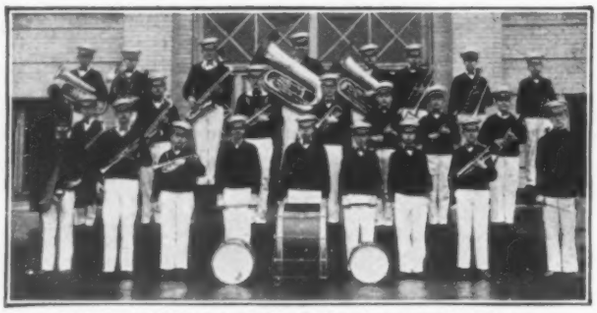
This nameplate identifies a genuine Dunham Thermostatic Radiator Trap



Magnolia High School Band, New Martinsville, W. Va.
H. B. Leighty, Director

Why Not Have a School Band?

It's Easy to Start One with Our Help

There is nothing like a School Band to foster the school spirit, and to provide a sane outlet for youthful enthusiasms. Instructors find the organization of such a friendly group a real aid in promoting school discipline and directly beneficial in bettering grades.

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In your school you have many students with some musical foundation—also others who would learn to play some instrument easily. You have many parents who would welcome such a movement and who would gladly provide their children with the necessary instruments. With our help both instruments and instructors are easily secured.

You need not be a teacher of music to start this movement in your school. No knowledge of music on your part required. If you would like to see a band or orchestra started in your school, write us today.

Our Services Offered Free

Buescher Instruments are played by America's leading orchestras and bands. We offer any superintendent the benefit of our many years of experience in helping organize musical groups in schools. It is only necessary for someone to take the initiative. Why not do this for your school?

With our help you will be surprised to find how easily it may be done. The first step is to write us for information blank, which when filled out and returned will tell us the number and kinds of instruments already available in your school, the number of pupils that may be interested. We can then advise whether band, orchestra or smaller group should be organized and what instruments will complete the most effective organization.

Write us today — without obligation. Catalogs and information will be mailed promptly.

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Buescher Band Instrument Co., 2821 Buescher Block, Elkhart, Ind.
Gentlemen: I am interested in securing your catalog and information about starting a school band. (536)

Name.....

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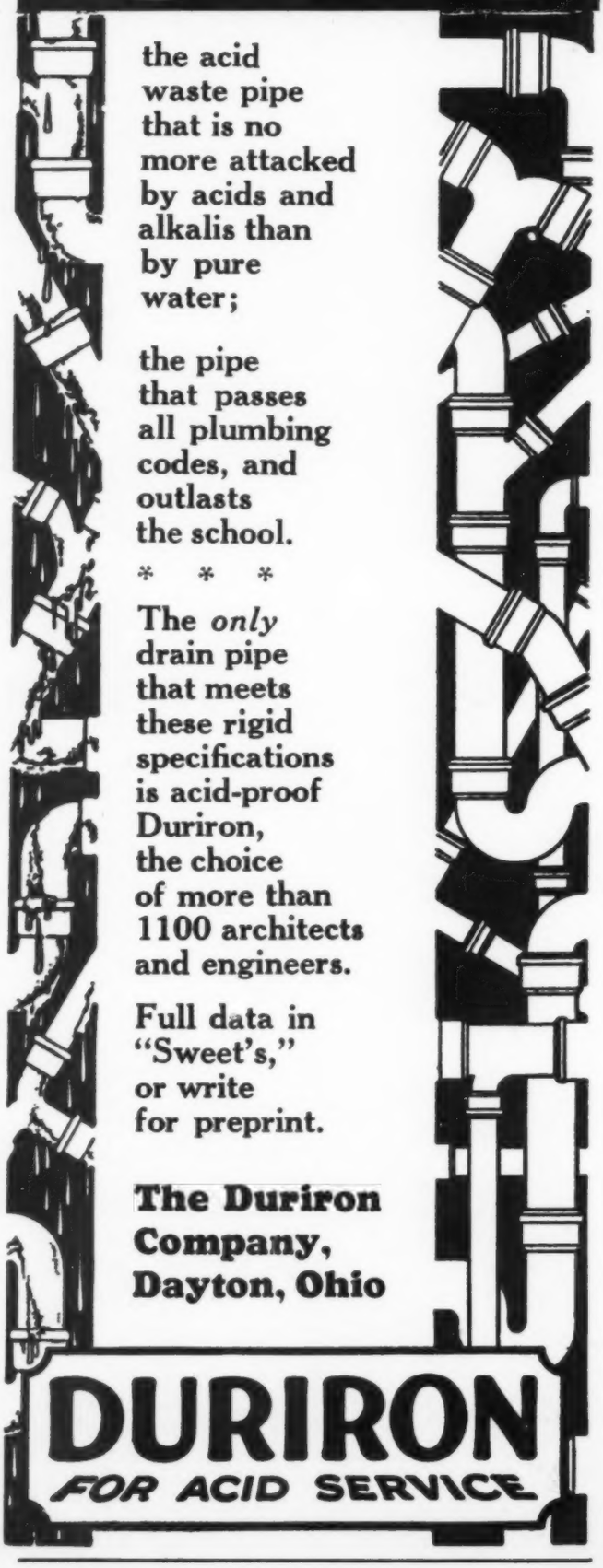

the acid waste pipe that is no more attacked by acids and alkalis than by pure water;

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It's the last hour of the school day that brings the greatest nerve strain. It is then that tired, uncomfortable, restless children pay less attention to studies—get into trouble and cause teachers most worry.

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Combination Desk with Moeser Arm Top. Standards finished in durable, baked enamel; woods, in Natural process finish, both in a soft brown color.

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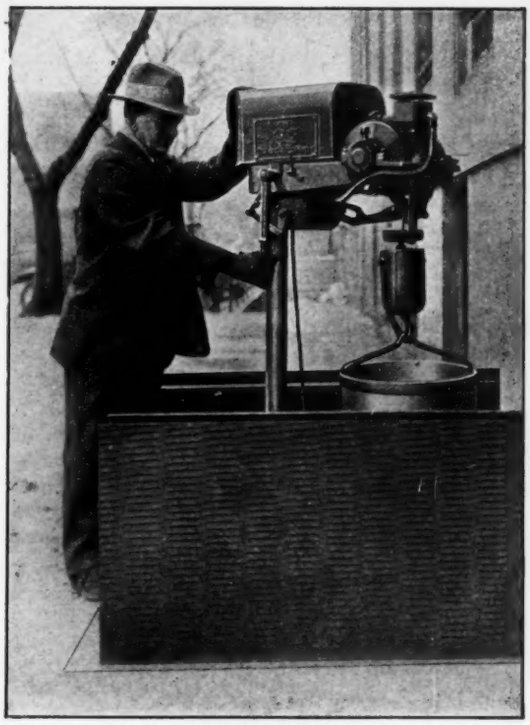

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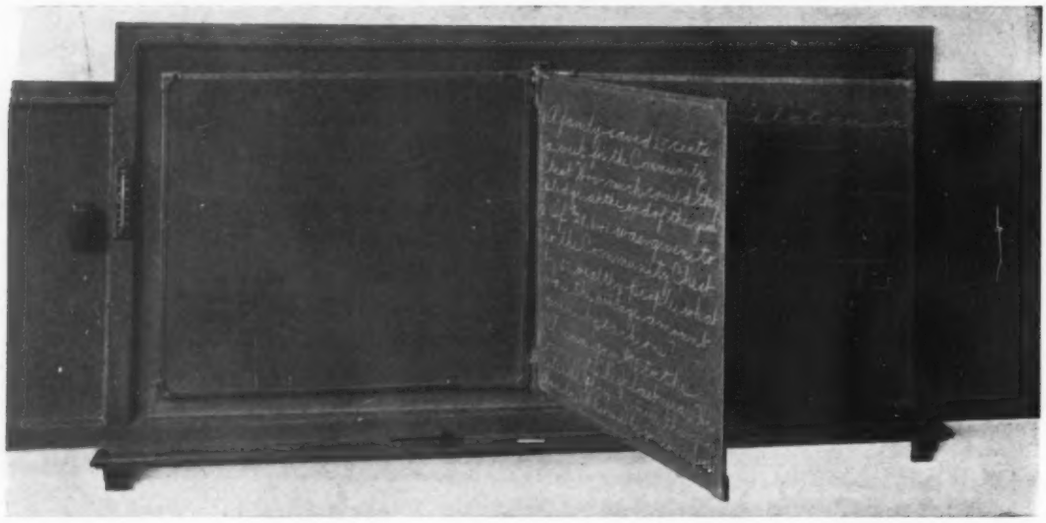

And what an improvement! The old fashoned blackboard all round the schoolroom walls, is as out-of-date today as the horse and buggy. The most modern arrangement of the blackboard evuipment is to use the "Alternator" teacher's swinging blackboard, with green poster board at each side to relieve the children's eyes. This system will enable both teacher and students to do better work . . easier. Teacher sitting in the center of the room close to her Alternator can hold the attention of the pupils by placing lessons on the big swinging blackboard. She can "flash" the lessons by saving it on the Alternator. She can also preserve material from day to day. The Alternator resembles most a huge book of eight pages or leaves. Only genuine Bangor slate and the finest hardware are used. The Alternator can be installed in new or old buildings with equal convenience. Just write us your individual problems. Ask for Catalog No. A-4.

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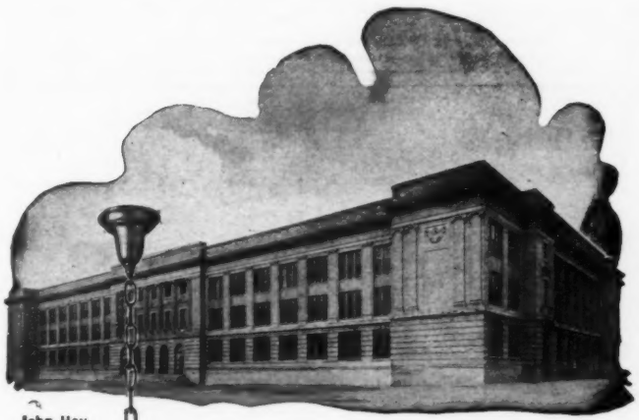

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The Rules of the Contest Are as Follows:

1. Anyone engaged in any branch of Educational Work is eligible to compete in this contest.
2. An individual may submit manuscript in *only one* of the four divisions of the general theme.
3. Papers submitted are not to exceed 5000 words in length.
4. All manuscripts must be in typewritten form on one side of the paper.
5. Be sure that your name, address and title appear in upper left hand corner of first page.
6. Contest opens September 1st, 1929, and closes February 15th, 1930. (No manuscript postmarked later than February 15th will be considered.)
7. Each contestant by submitting his manuscript waives any interest in the article submitted. Any or all of the essays submitted may be published in full or in part at a later date.
8. In case of a tie in any of the four divisions, duplicate prizes will be awarded.
9. Address all manuscripts to "Majestic Radio Essay Contest," Educational Department, Grigsby-Grunow Company, 5801 Dickens Avenue, Chicago, U. S. A.

EDUCATIONAL DEPARTMENT
Grigsby-Grunow Company, Chicago, U. S. A.

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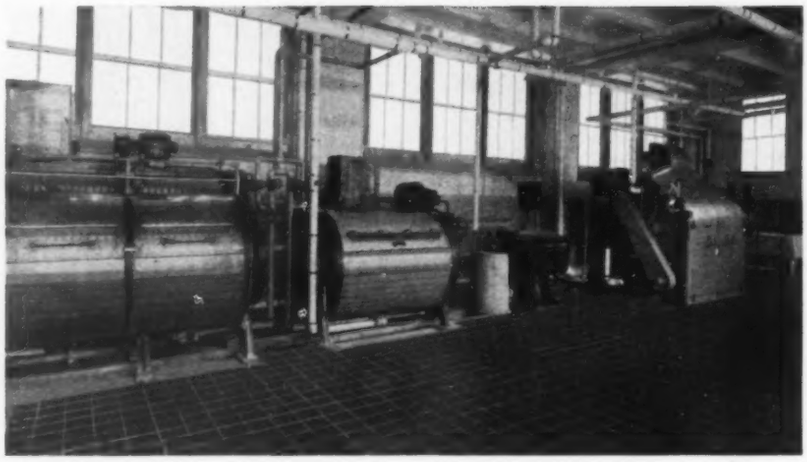
A photograph *of* *"laundry satisfaction"*



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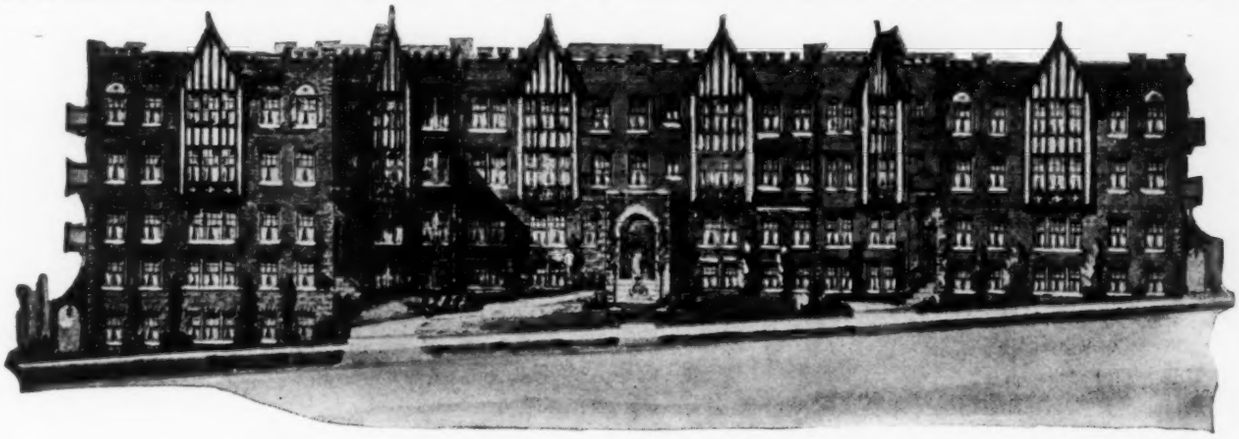

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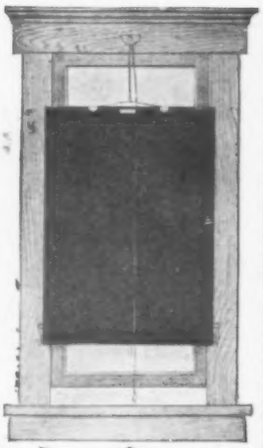

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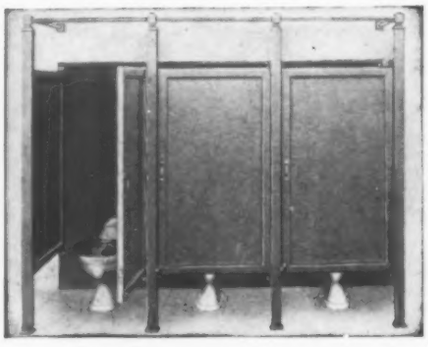

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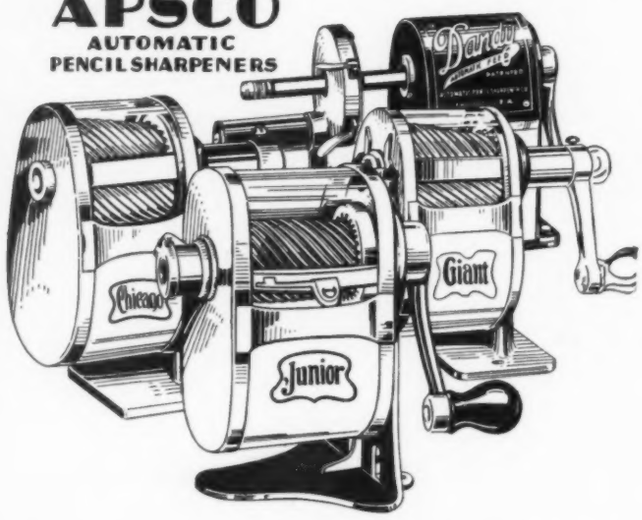

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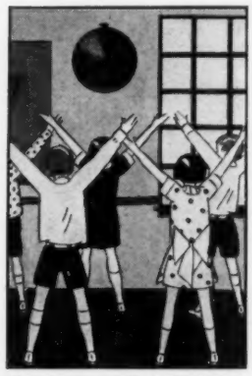

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The principal's voice may be heard in 15 (or 150) rooms at once.

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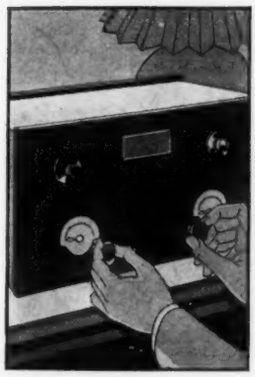

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(Established 1900)

333 North Michigan Avenue, Chicago, Illinois

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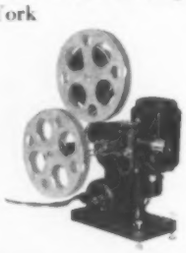

Classroom Use:

Type "G" — 16 mm. Projector — simple —compact — $105.00 with case.

Also Type "B" — 16 mm. Projector $55.00

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Gentlemen:

Please send me descriptive literature and information on the DeVry Projector and school films.

Name .....

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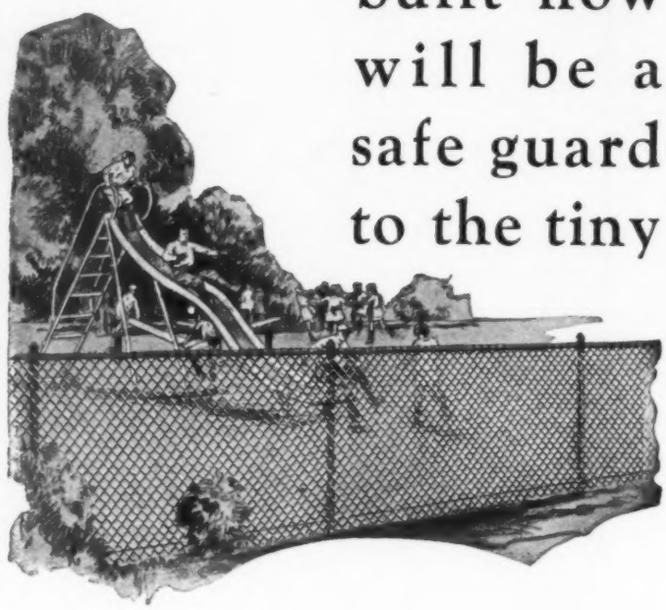
Stewart IRON and WIRE FENCES

built now will be a safe guard to the tiny



"first graders" when they need it most

STEWART builds both **CHAIN LINK** and **IRON PICKET FENCES**

Look at the automobile advertising—75, 85, 115 miles-an-hour. After accidents happen it's too late to realize that speeders can't see or read "School" signs when going fast.

Build NOW and be as safe as you can. We'll be glad to give you a preliminary estimate to have something definite to discuss with your board.

Or we'll gladly send you the new Stewart School Fence Catalog.

The Stewart Iron Works Co., Inc.

516 Stewart Block, Cincinnati, O.

Representatives in all Principal Cities

.. make them **SAFETY** lines with an *Anchor Fence*

A SCHOOL or community cannot discharge its obligation to children by simply pointing out the danger of running off the playground. Only by providing positive protection can relief from responsibility be obtained.

Children *must* stay on the playground where the boundary is marked by a neat and strong Anchor Playground Fence . . . a friendly barrier, standing ever-vigilant, ready to turn back scampering feet from the dangerous roadway.

Phone the Anchor Fencing Specialist near you—have him show you the reasons for the exceptionally long life of an Anchor Fence. Have your playground properly enclosed.

ANCHOR POST FENCE COMPANY
Eastern Avenue and Kane Street, Baltimore, Md.

Albany; Boston; Charlotte; Chicago; Cincinnati; Cleveland; Detroit; Hartford; Houston; Los Angeles; Mineola, L. I.; Newark; New York; Philadelphia; Pittsburgh; St. Louis; San Francisco; Shreveport

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"Just What We Need"

—says many a school executive

A highly efficient, low-priced duplicator that copies anything typed, written or drawn. You'll find it unsurpassed for school forms, bulletins, announcements, etc. Takes any size stock from postcard to a 9x15 sheet, reproducing in one or more colors, as you prefer.

HEYER - Rotary - TRADE MARK - Lettergraph

Simple, durable, trouble-free. Any boy or girl can operate. Provides clear-cut easy-to-read copies at an operating cost of only about 25c per 1,000. Real economy! And the price, completely equipped, is only $35.

Shall we send you details of our 10-day Trial Offer? Mail coupon.

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Established 1903
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Supplies for all Duplicators

THE HEYER DUPLICATOR CO., INC.
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You may send details of the Heyer Rotary Lettergraph and your 10-day Trial Offer.

Name .....

Address .....

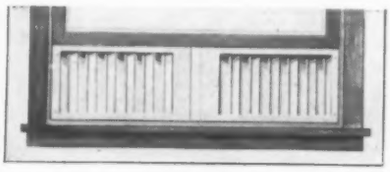
Town ..... State.....

fresh air Everywhere

with V-W Ventilators

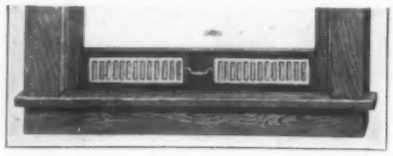
Smoke from a factory near St. Mary's Parochial School at Marion, O., made it almost impossible to ventilate classrooms. When windows were opened, clouds of smoke swept in, depositing layers of soot. Clothes were soiled, classwork impeded, and health of students threatened.

Then V-W Ventilators were installed. The nearby factory still sends clouds of smoke, but the classrooms are clean now; impurities cannot pass by the patented "R"-shaped louvers that stop dirt, drafts, rain and snow, while allowing free ventilation.



V-W Removable Window Ventilator is installed or removed without tools.

V-W Built-in Ventilator is built right into the window sash.



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the V-W VENTILATOR CO.

2893 A. I. U. Bldg. Columbus, Ohio

"INTER-TWILL" Window Shades *for* SCHOOLS

Fulfill all requirements

Specify—"INTER-TWILL" because . . . there are more years of service in these window shades. It is a TWILL woven fabric of exceptional strength. "Inter-twill" shades are washable.

If total exclusion of light is desired, specify Interstate "NOLITE" Shade Cloth. Shadowless and light-proof in all colors including light colors and white.

Made in the color tone of your choosing

Interstate Shade Cloth Co.
HOBOKEN NEW JERSEY

and

The Lapsley-Interstate Shade Cloth Co.,
Baltimore Maryland

A Typical Welch Installation

WEST HIGH SCHOOL
COLUMBUS, OHIO

Why School Buyers of Laboratory, Vocational and Library Furniture Select Welch Equipment

Materials

To insure the quality of merchandise, only the highest grade of materials must be used. We use the best grade and texture of Birch and Selected White Oak that can be purchased. The plumbing and hardware fittings are of superior quality. For example, compare Welch lead drum traps, plumbing fittings, locks, etc., with other manufacturers.

Workmanship

The location of our laboratory and library furniture factory is in the heart of the woodworking district, affording us ample supply of highly skilled cabinet makers, finishers and other artisans.

Our cabinet makers, with many years' experience in furniture, make the highest quality of laboratory, vocational and library furniture workmanship can offer, under supervision of practical men with lifetime experience.

Our plant is arranged and equipped with the most modern machinery necessary to manufacture laboratory, vocational, and library furniture quickly and economically.

Service Department

Trained engineers and designers of many years' experience are available to contractors, architects, and buyers, for consulting and advising services in reference to laboratory, vocational and library equipment without charge or obligation. This includes suggestive layout plans showing the various pieces of laboratory furniture, together with the roughing-in points for all plumbing, electricity, gas, etc., as required for the various equipment specified.

Our planning and installation department carries work through to completion covering the actual installation and the giving of engineering service and inspection even after the work is completed.

Catalog F

Our Catalog F will be mailed promptly, prepaid, upon request. In it you will find a complete line of laboratory, vocational and library furniture for your various departments, giving in concise terms the exact construction of each piece. The many illustrations will give you a clear idea of the completed furniture.

W. M. WELCH MANUFACTURING COMPANY

Manufacturers of School and Laboratory Furniture, Apparatus and Supplies

Sales Representatives in Principal Cities

Laboratory Furniture Factory
MANITOWOC, WISCONSIN, U. S. A.

General Office, Warehouse and Scientific Apparatus Factory
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ARCHER DENTAL HYGIENE CHAIR NO. 2

For Schools and Clinics

Showing Chair in the Upright Position

Write for circular and prices

Sold Direct by the Manufacturers

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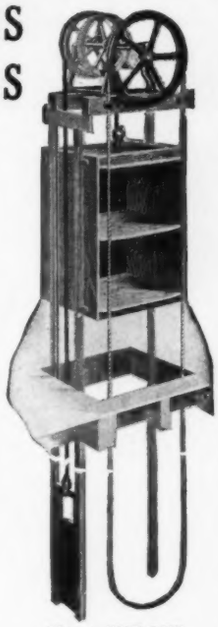
187 No. Water St. Rochester, N. Y.

SEDGWICK
DUMB WAITERS and ELEVATORS



OUR ADVISORY Department, with a broad experience of 37 years, invites inquiries from Schools and Colleges.

The Type "FDCG" Geared Automatic Brake Dumb Waiter is most suitable for usual requirements. Others are shown in our New Catalog, which will be sent upon request.

Type "FDCG"

Sedgwick Machine Works
165 West 15th Street New York
Manufacturers of Ash Hoists and Freight Elevators

"CINOPLATE"
Valleyco Blackboard

Unanimously Elected The Nation's Choice

THE overwhelming majority sweeps in favor of these dependable, practical blackboards . . . designed and built for 100% satisfaction.

A grade for every purpose

Cinoplate	Cinobestos	Cinoboard
Specially treated wood; grainless; knotless; absolutely waterproof.	Long asbestos fibre and Portland cement.	Wood fibres; kiln cured.

Your local dealer can supply you or write us for details.

Economical
Moisture-Proof
Non-Warping
Non-Buckling
Everlasting
Guaranteed

THE VALLEYCO COMPANY, INC.
116-118 East Water St., Cincinnati, Ohio

We guarantee these boards unconditionally never to crack, check, chip, peel or gloss.

Scenery

Asbestos curtains,
Velour curtains

and

Stage scenery for your
Auditorium stage.

Twenty years of experience in equipping High Schools has placed us in a position to know the particular requirements for your stage.

Write us for further information or request call from our representative.

Twin City Scenic Company

2819 Nicollet Ave., Minneapolis, Minn.

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HILD

Electrically Operated

FLOOR MACHINE

USES The Hild Floor Machine does five things. It will SCRUB floors spotlessly clean. APPLY liquid or paste wax. POLISH waxed floors. SCRUB off varnish and SANDPAPER. In operation all the weight of machine used rests upon the brush revolving 150 R. P. M.

Model "C" 15" Diam. Brush
(Supplied with or without Suds tank Attached to Handle)

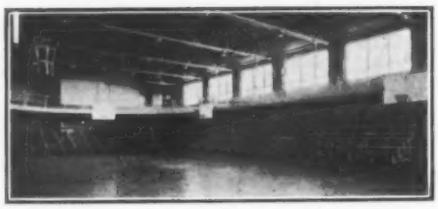
No matter what kinds of floors you have the Hild Floor Machine will clean and maintain them, easily, quickly and thoroughly.

Manufactured in three sizes, 11", 13" and 15" dia. brush, moderately priced and guaranteed for one year.

Let us send you our illustrated circular and information about our FIVE DAYS FREE TRIAL offer.

HILD FLOOR MACHINE CO.
108 W. LAKE ST., CHICAGO, ILL.

Polishing Brush
(All brushes can be attached to the machine or detached in a seconds time.)



THE WAYNE SAFE STEEL SECTIONAL GRANDSTAND

For the School With a Small Budget for Seats

The design of Wayne Stands is such that additional sections can be added without changing the arrangement of seats already in use.

Write for complete information.

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PEMBROKE AVE., WAYNE, PA.

Representatives in Baltimore, Md., Cambridge, Mass., New York, Milwaukee, Wis.; Omaha, Neb.; Pittsburgh, Pa.

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Stop at the

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Modern Fireproof
Columbus' Most Popular Hotel

300 Rooms With Bath at $2.50 and $3.00
Convenient to Stores and Theatres
Free Parking Lot and Garage in Connection

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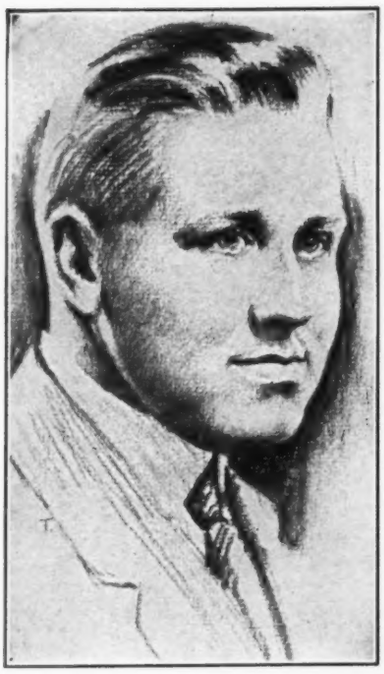


George Hossfield
the new
WORLD'S
CHAMPION

Other Championships
at the 1929 International
Typewriting Contest
Won on the Underwood

The World's Amateur
Typewriting Championship
won by Chester Soucek (Penn.)
at the rate of 118 words per minute

The World's School Novice
Typewriting Championship
won by Florence Bell (Ont., Can.)
at the rate of 91 words per minute

The American School Novice
Typewriting Championship
won by Belva Kibler (Ariz.)
at the rate of 88 words per minute

A complete copy of the official records
will be sent upon request.

For the 24th *consecutive time*

THE WORLD'S
TYPEWRITING CHAMPIONSHIP

has been won on the

UNDERWOOD

These are the fastest fingers in the world!

They are the miraculously nimble fingers of Mr. George Hossfield, World's Champion Typist, who has staged a remarkable comeback. Last Saturday night at Massey Hall, Toronto, he typed for one solid hour at the astounding rate of 135 net words per minute — more than 11 strokes per second!

No other fingers achieved such lightning-swiftness combined with such bull's-eye accuracy.

It is natural that the new champion's fingers—*and the fingers of every other World's Typewriting Champion*—have leapt into fame from the keys of the Underwood. No other typewriter can match its records for speed and accuracy.

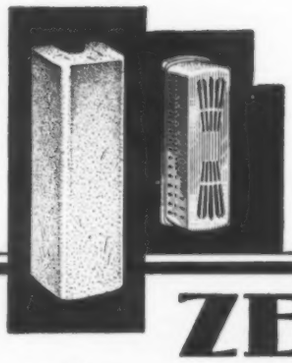
Year after year, in contest after contest, it has been put to the most grueling tests imaginable by the fastest typists known — and the Underwood has never failed them.

UNDERWOOD
TYPEWRITER COMPANY
Division of Underwood Elliott Fisher Company
342 Madison Avenue, New York, N. Y.

"Underwood, Elliott-Fisher, Sundstrand—Speed the World's Business"

UNDERWOOD

THE MACHINE OF CHAMPIONS



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ZEF-IR deodorizing products

THE crowded conditions of modern life demand Zef-ir—a scientifically constructed deodorant that *actually purifies the air as well as sweetens it.*

It is made in various forms—Zef-ir Blocs and Crystals for general use, Zef-ir Blockettes for urinals. *Write for samples.*

THE HUNTINGTON LABORATORIES, INC.

Huntington, Indiana.

FROM HUNTINGTON LABORATORIES

THE problems of school administration concern the operation of the school plant as well as the supervision of teacher and pupil.

The service department of The NATION'S SCHOOLS is at all times in a position to advise on purchasing sources for all types of school building materials and equipment and to see that the school executive is put in touch with a reliable manufacturer for any of his needs.

A letter or postcard will bring prompt response and aid.

The NATION'S SCHOOLS PUBLISHING CO.
919 North Michigan, Chicago

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PRESIDENT

Atlantic City's Newest Boardwalk Hotel

Offers for the Fall and Winter Season

Single Rooms with Bath—
From
$28.00 weekly, European Plan
Or
$49.00 weekly, American Plan

Double Rooms with Bath—
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$42.00 weekly, European Plan
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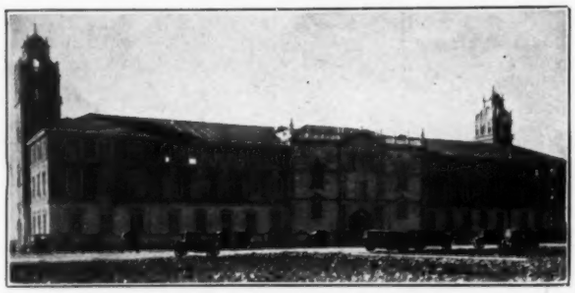
Sea Water Swimming Pool
Marine Sun Deck-Concert Orchestra

Under the management of Charles D. Boughton

BROWNE WINDOWS
Throughout



Texas Technological College, Lubbock, Texas
Sanguinet, Staats & Hedrick, William Ward Watkins } *Associate Architects*

Demonstrate Superior Qualities. Perfect Ventilation; Maximum Light and Vision; Absolute Weather Protection; Noiseproof when closed; Safety and Economy in cleaning exterior of glass from inside; Easy Operation; Continuous and Lasting Service; No Depreciation; Fuel Saving and Minimum Maintenance Costs.

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Richey, Browne & Donald, Inc.
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STAGE LIGHTING *Supplies*

EVERYTHING needed for lighting the stage can be furnished by Kliegl—from gelatine color mediums to carbons, cables, pipe clamps, etc. A complete line of parts and supplies is carried in stock at all times ready for immediate shipment. No delays. Reliable high-quality products. Reasonable prices. Wire, mail, or phone your orders for:

Spotlights	Color Wheels	Connectors	Footlights
Floodlights	Gelatine Mediums	Plugging Boxes	Borderlights
Stereopticons	Lamp Coloring	Terminal Lugs	Dimmers
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Scenic Effects	Stage Cable	Shutters	Panel Boards
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KLIEGL BROS
UNIVERSAL ELECTRIC STAGE LIGHTING CO., INC.
ESTABLISHED 1896
THEATRICAL · DECORATIVE · SPECTACULAR
LIGHTING
321 WEST 50th STREET
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An Applicator Bottle

furnished with our compliments in your own medicine cabinet will soon convince you that

MERCUROCHROME—220 SOLUBLE

(dibrom-oxymercuri-fluorescein)

IS THE

Logical Successor to Tincture of Iodine

FOR

First Aid Prophylactic and General Antiseptic Use

Mercurochrome stains as Iodin does, and it is the stain of Mercurochrome, as it is of Iodin, that shows just where and how effectively the germicide has been applied; it fixes the bactericidal agent in the field for a relatively permanent period which prolongs the asepsis or the sterilizing effect, and it provides for demonstrable penetration into the tissues beneath the superficial surfaces. Inasmuch as Mercurochrome is definitely proved an extremely efficient general antiseptic, it is only reasonable to consider it the successor to Iodin in this field, as it is free from the objectionable features of Iodin, for

MERCUROCHROME DOES NOT IRRITATE, BURN OR INJURE TISSUE

SELL YOURSELVES FIRST

HYNSON, WESTCOTT & DUNNING

BALTIMORE, MD.

HYNSON, WESTCOTT & DUNNING,
DEPT. N, BALTIMORE, MD.

Please send me Mercurochrome Applicator Bottle for personal use.

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Business Address .....

The "Main" Thing in Maintenance is Shine-All

TRADE MARK REG. U.S. PAT. OFF.

The One Cleaner for All Type Floors...

Also PAINTED and VARNISHED SURFACES

Shine-All will clean and polish desks, furniture, painted walls, etc., just as easily and economically as it maintains all types of floors.

HILLYARD CHEMICAL CO.
ST. JOSEPH, MO.

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One of the Nation's outstanding hotels embodying every modern convenience that so attracts travelers throughout the world.

Rates: **$2.50** *and* **Up**

Hotel Sinton
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JOHN L. HORGAN, *Managing Director*

Retain the old floor to give added strength and warmth to the room, and keep in your pocket the money you would have to pay for removal expense.

Without tearing out the old boards or concrete—or any special foundation work whatever we can put a Marbleloid flooring right over the old floor. You would have a permanent, fireproof, sanitary, modern floor of beautiful pattern and color.

We have installed several hundred thousand feet of Marbleloid Floorings in school buildings, old and new. *Our company makes the material, installs the floor and guarantees the job.*

Mail coupon for further particulars.

The Marbleloid Co., 241 W. 34th St., New York

"Terrazzo Type," "Travertine Terrazzo," "Marbleized Rubber Tile" and "Plastic Magnesia" Floorings; also Eastern agents for "Tile-Tex" resilient floor tile.

PIN THIS TO LETTERHEAD

MARBLELOID FLOORINGS

Send Information about Marbleloid Floorings.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,

Of NATION'S SCHOOLS, published monthly at Chicago, Illinois, for October 1st, 1929.

State of Illinois } ss.
County of Cook }

Before me, a Notary Public, in and for the State and county aforesaid, personally appeared James G. Jarrett, who, having been duly sworn according to law, deposes and says that he is the business manager of The Nation's Schools Publishing Co., and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager, are:

Publisher: The Nation's Schools Publishing Co., Chicago, Illinois.

Editor: Prof. M. V. O'Shea, Madison, Wisc.

Managing Editor: John A. McNamara, Chicago, Illinois.

Business Manager: James G. Jarrett, Chicago, Ill.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

The Modern Hospital Publishing Co., Inc., Chicago, Illinois; Dr. Otho F. Ball, Chicago, Ill.; S. R. Clague, Chicago, Ill.; James G. Jarrett, Chicago, Ill.; Wheeler Sammons, Chicago, Ill.; Stanley R. Latshaw, New York, N. Y.; D. W. Sammons, Chicago, Ill.; J. P. McDermott, Chicago, Ill.; John A. McNamara, Chicago, Ill.

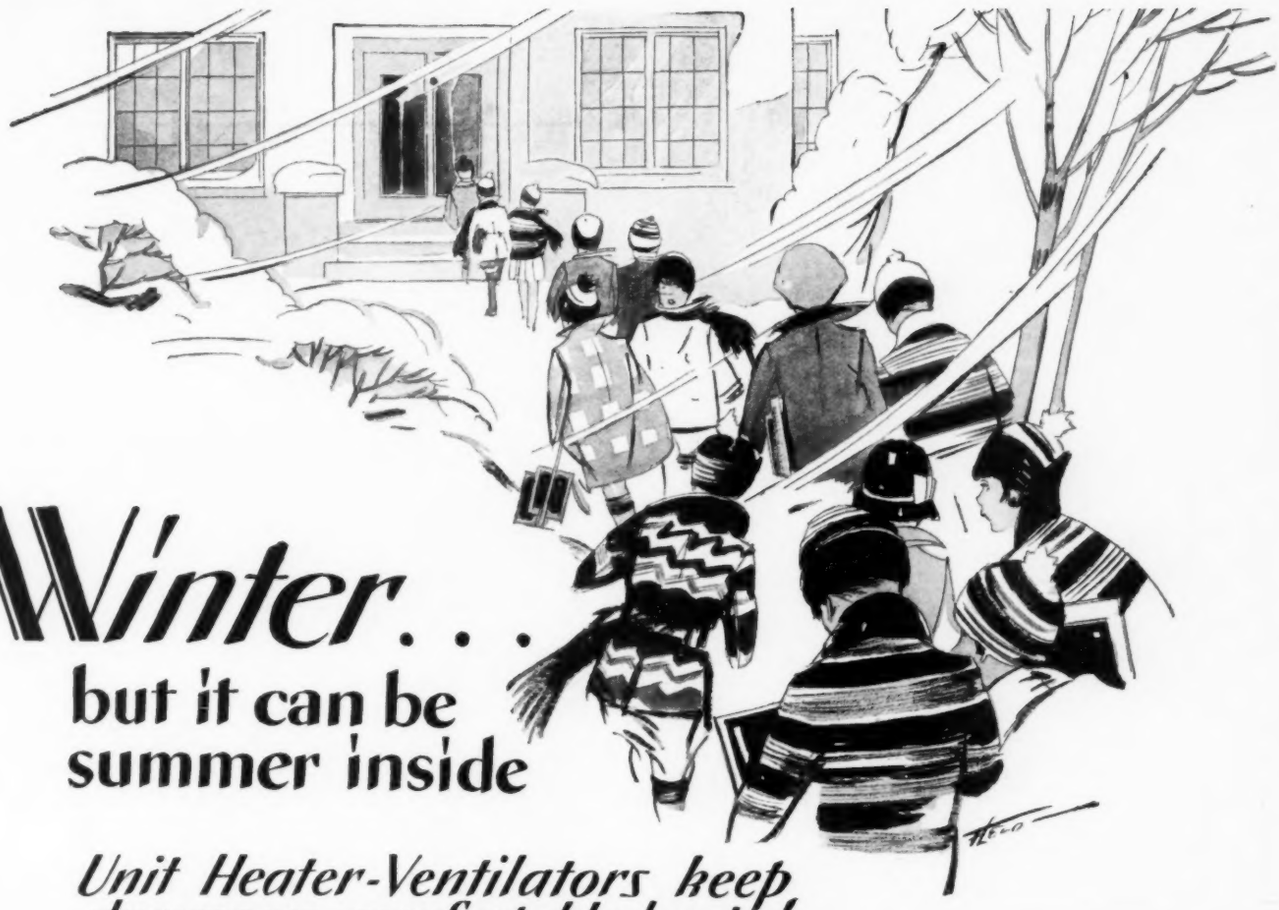
3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities, are: (If there are none, so state.) There are no bondholders, mortgagees or other security holders.

J. G. JARRETT, Business Manager.

Sworn to and subscribed before me this 24th day of September, 1929.

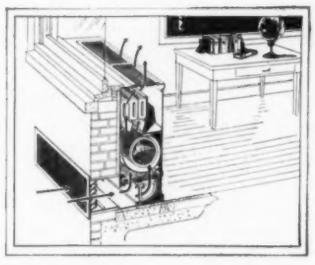
[SEAL] J. P. McDERMOTT, Notary Public.

My commission expires August 10, 1933.



Winter . . . but it can be summer inside

Unit Heater-Ventilators keep classrooms comfortably heated regardless of the weather . . .



Simply raising the temperature in a classroom does not make it a comfortable classroom—nor a healthy one. A red-hot stove will raise room temperature...and the absentee report, too!

Stuffiness, drafts, odors, cold corners—are common conditions in hundreds of schools during the winter months.

But Unit Heater-Ventilators give school children their full share of clean air . . . dust removed . . . warmed to a precise temperature. Sturtevant Unit Heater-Ventilators are to be found in schools . . . old and new . . . from coast to coast.

Many actual photographs of Unit Heater-Ventilators in schools, large and small—in different localities—are found in our Catalog 361. May we send you a copy? Or answer your queries on heating and ventilating subjects?

B. F. STURTEVANT COMPANY

Plants and Offices at: Berkeley, Cal. ◥ Camden, N. J. ◥ Framingham, Mass. Galt, Ontario ◥ Hyde Park, Mass. ◥ Sturtevant, Wis.

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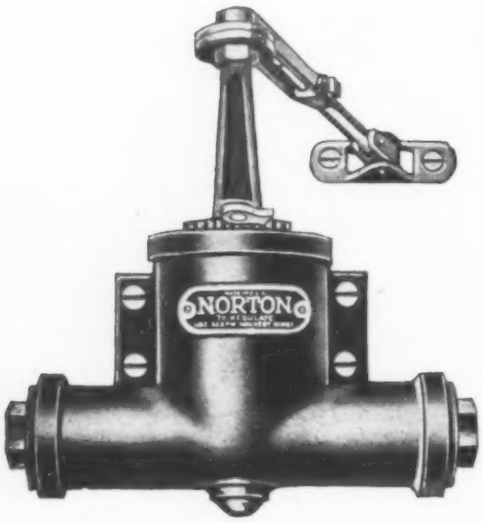
SUPPLIES OUTDOOR AIR FILTERED CLEAN AND TEMPERED

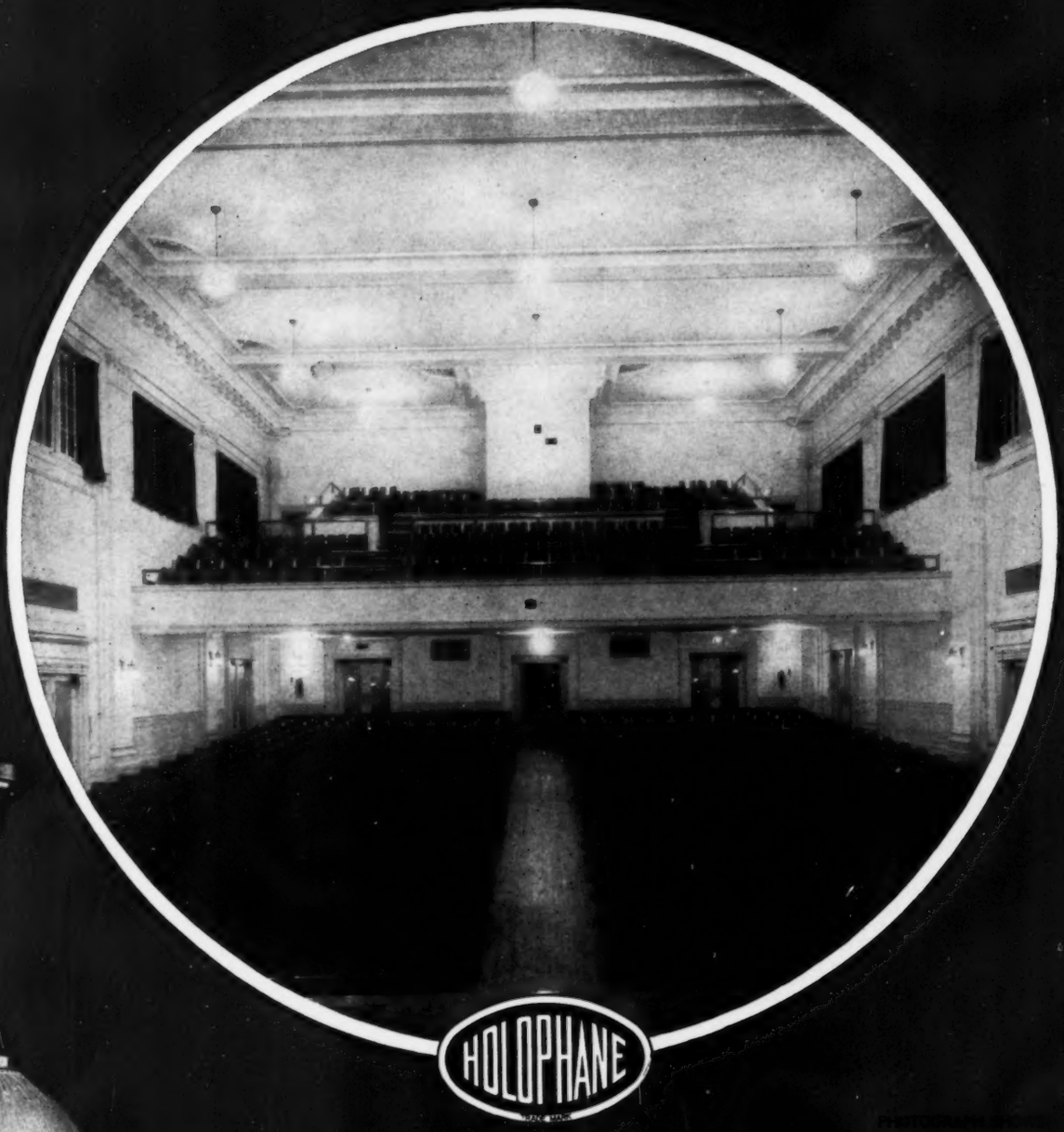
INSTANTLY *the door starts closing— the* NORTON DOOR CLOSER *controls it!*



Norton uses the perfected rack and pinion principle which has no dead center to pass before it checks the surge of the door. This eliminates much of the strain on doors, hinges and closers, as compared with ordinary crank style types.

Norton Door Closers are, therefore, remarkably safe, economical and lasting. Norton controlled doors are always controlled. Send for catalog.

NORTON DOOR CLOSER COMPANY
Division of The Yale & Towne Mfg. Co.
2900 North Western Avenue Chicago, Illinois



PLANNED LIGHTING
WITH HOLOPHANE SPECIFICS

FOR AUDITORIUMS
WRITE FOR BOOKLET No. 344A

HOLOPHANE CO., Inc.
342 MADISON AVE., NEW YORK CITY

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PHILADELPHIA BALTIMORE ST. LOUIS SYRACUSE
HARTFORD BIRMINGHAM LOS ANGELES BOSTON
CLEVELAND CINCINNATI

OILING—*out of date*

MOPPING—*too slow*

HAND SCRUBBING—*too costly*

FINNELL . . . . *JUST RIGHT!*

scrubs, waxes and polishes

OLD methods are constantly being dropped in favor of the new; and schools should lead in this movement — whether in teaching methods or floor cleaning methods. To oil floors is unsatisfactory, insanitary, as well as out of date; to mop them requires a great deal of time and leaves the floor streaky and partly cleaned; to have them scrubbed by hand is very expensive.

FINNELL Electric Scrubber Polisher is the modern method of floor maintenance. It's speedy. It's economical. It's quiet. It is an all-purpose machine —scrubs, waxes and polishes, and can be used on any kind of floor. When scrubbing, clean water is supplied for every square inch of floor space—every bit of dirt is chased out, even from tiny cracks and crevices. In waxing, it rubs the wax in thoroughly—leaves no sticky surfaces.

8 models priced from $87.50 up

The FINNELL gets floors far cleaner than is ever possible with hand methods and does the work in much less time. Reports from hundreds of schools show that the FINNELL actually pays for itself in labor saved, often in less than a year.

The FINNELL can be used to advantage throughout the whole school building—in the gymnasium, locker room, cafeteria, corridors, classrooms, underneath the chairs and desks.

There are eight FINNELL models—a size to meet your needs exactly. A FINNELL engineer will be glad to make a survey and recommend the model you should have. For information write FINNELL SYSTEM, Inc., 1511 East Street, Elkhart, Indiana. District offices in principal cities.

It waxes— It polishes

FINNELL

It sands— It scrubs

ELECTRIC FLOOR SCRUBBER-POLISHER